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RECOMMENDATION AS TO SANITATION CONCERNING EMPLOYEES OF THE MINES ON THE RAND MADE TO THE TRANSVAAL CHAMBER OF MINES

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At the invitation of the Chamber of Mines, I arrived in Johannesburg Dec. 3, 1913, to make investigations into the cause of the high death-rate from pneumonia among the native laborers working in the mines of the Rand. As a result of this investigation I was asked to recommend such measures as may appear necessary for the reduction of the death-rates and the improvement of the general sanitary condition of the mines and compounds.

For this purpose I was assisted by Major Robert E. Noble, Medical Corps, United States Army, general inspector, Department of Sanitation, Isthmian Canal Commission, and Dr. Samuel T. Darling, chief of the Board of Health Laboratory, Department of Sanitation, Isthmian Canal Commission.

In investigating this matter I find that the mortality among employees has been very large.

The reports of the Native Affairs Department show that for natives employed in mines and industrial works in the proclaimed government district of the Transvaal during the year 1903, the death-rate was 71.7 per thousand. This high death-rate has been steadily dropping till the present time. During the year 1912, for about 300,000 employees in the same area, the rate was 26.84. This rate is still very much too high, as we are considering men in the prime of life.

The death-rate among the negro employees working on the Panama Canal during the same year was only 10. Still this drop from 71 per thousand to 26 per thousand in the course of nine years is most encouraging.

On analyzing the reports for 1912 of the Native Affairs Department, Appendix 2, page 79, we find that the total death-rate was 22.6 for diseases. The four highest diseases were pneumonia, phthisis, meningitis and enteric fever, giving us rates of 9.8, 5.4, 1.3, 1.1. These four diseases are all more or less infectious and contractable. If they could be entirely eliminated, the rate for 1912 would be reduced to 5.0 for all other diseases. While entire eradication of these diseases cannot at present be accomplished in this or any other community, probably, by proper hygienic measures, a very appreciable reduction could be accomplished.

PNEUMONIA

First, let us consider pneumonia. It varies very greatly in the different mines. It also varies greatly as to the locality from which the natives come. Among natives from the British Nyassaland Protectorate it is highest. Among the natives from the Cape Province it is lowest.

Taking the report of the Native Affairs Department from 1909 to 1913, we find that February had the lowest rate with an average of 9.56, and May the highest with 12.64. Taking three consecutive months, we find that January, February and March have the lowest rates with an average of 10.02. We find that October, November and December have the highest rate with an average of 12.28. Ordinarily, pneumonia causes its greatest mortality in the cold winter months. This does not seem to be the case here as far as the mortality-tables bear evidence; but these tables are obscured, as far as this particular point is concerned, from the fact that the tropical native was not brought to the Rand during the winter months. It is no doubt the case here, as it is everywhere else, that the incidence of pneumonia is greater during the winter than during the summer months.

Dr. Maynard has worked out tables which show this to be the case.

The pneumonia rate varies widely also in different localities. Among natives not working in mines in the city of Johannesburg, the rate was 1.20 per thousand for the year 1912. In the new Goch mine, the rate among natives was 16.71. In the Municipal Location at Klipspruit, the rate among 750 natives over 18 years of age, extending over a period of three years, was 1.37. This is the same class, and also age, as the men in the mines.

Pneumonia is a disease in man due to infection by a particular organism—the pneumococcus. Individuals and races differ widely in the degree in which this organism affects them. Some races, like the white, resist infection strongly. Others, like the negro, have less resistance. Those races with less resistance acquire a much higher degree of resistance after long exposure to the infection. The negro when brought into a community in which pneumonia prevails acquires nearly as high a degree of resistance as the white man. If we take 100 white men and examine them, we shall find that twenty or thirty have virulent pneumococci in their throats. When one of these individuals becomes much depressed from any cause, such as exposure to cold, starvation, severe sickness or any constitutional strain, he is liable to develop

pneumonia. If we bring the unacclimatized negro into contact with such persons or other infected negroes, he gets the pneumococcus in his throat and secretions in the same way. The white man, by long exposure to this pneumococcus, having constant slight colds, sore throats, etc., has acquired more or less immunity to the organism. The negro, when he first comes in contact with the pneumococcus, has none of this immunity. Expose the two men to the same depressing agency, give them both a bad cold, for instance, and the white man, through his immunity, resists the pneumococcus, while the negro does not. The organism obtains an entrance in the latter case, and the man succumbs to pneumonia.

If we take a community composed of persons who have had little exposure to the pneumococcus, we shall find a high mortality-rate from pneumonia. If the community is made up of persons who have had prolonged exposure to the pneumococcus, we shall find a low mortality-rate from pneumonia.

We find for the year 1912, that the 21,000 tropicals had a death-rate from pneumonia of 26.30. But the 199,000 non-tropicals had a rate of 8. In general, the tropical is the non-civilized native who has had little contact with the white man's diseases, and the non-tropical, the native who has had more or less contact with civilization—and the white man's diseases.

In general, therefore, a community which has had a large proportion of tropical natives will have a high pneumonia death-rate, and a community with a large proportion of non-tropical natives will have a low pneumonia death-rate.

This is a general rule to which there are individual exceptions, as is always the case in infectious diseases.

It is everywhere asserted on the mines by those in a position to know, that the old "boy" has a very much lower rate of pneumonia than the new "boy." I have no doubt that this is true. All the facts that we can collect point in that direction. On the Isthmus the new "boy" had a four and a half times higher rate than the old "boy." Dr. Maynard, in his excellent report on this subject, finds that taking the pneumonia among natives on the mines, from the first to the eighteenth month at work, the rate is: 15.83 per thousand during the first six months, 9.01 during the second six months, and 5.31 during the third six months.

Furthermore, in confirmation of this, in one of the mines especially investigated with regard to this point, it was found that a marked preponderance of deaths from pneumonia occurred during the first few months of service in the mines. All the deaths from pneumonia during the year 1913 at this mine, according to the month of service in which they occurred are given in Table 1. The very extensive and useful statistical tables furnished us by the Witwatersland Natives' Labor Association show that during the year 1912, 2,031 deaths from pneumonia occurred among native laborers. Of these deaths, 1,199 occurred among men who had been on the mines less than six months. In 1913, 1,668 deaths occurred from the same cause. Of these deaths, 981 occurred among men who had been on the mines less than six months.

TABLE 1.—DEATHS ACCORDING TO MONTH OF SERVICE

No. of Deaths	Month of Service*
16	1st
18	2d
11	3d
9	4th
11	5th
9	6th
7	7th
8	8th
5	9th
4	10th
6	11th
5	12th

* Including previous service.

The uniformity with which pneumonia attacks preponderatingly the new boy, or recently arrived native, is as pronounced here on the Rand and in Rhodesia as it was on the Isthmus of Panama, and this seems to be the only generalization of epidemiologic value yet drawn with regard to the incidence of pneumonia.

This indicates that the question of immunity is the most important element in the causation of the death-rate. This being the case, what sanitary step can be taken to decrease the rate?

In the construction of the Panama Canal, in its incipiency, we had much the same trouble with pneumonia among the negroes that is experienced with the negroes in the mines in the Transvaal.

The bulk of our working force is composed of negroes brought from the West India Islands, mostly from Jamaica and the Barbados. In August, 1913, our total force was 58,500, of whom 46,000 were negroes and 12,500 white men. In 1906, our force was an average of 21,000 negroes and 5,400 white men. Among these negroes we had 396 deaths from pneumonia, a rate of 18.74 per thousand per annum. In 1907, we had an average of 28,600 negroes and 10,700 white men. Among these negroes we had 304 deaths from pneumonia, a rate of 10.65. In July, 1906, with a negro force of 22,989, we had 84 deaths, which gives us an annual rate of 43.41.

The death-rate for pneumonia among the black employees of the Isthmian Canal Commission in 1906 was 18.74 per thousand, which is higher than the death-rate for this disease among native employees in the Proclaimed Labor District of the Transvaal for any year since 1909.

The rise in pneumonia, with us, commenced in October, 1905, and increased until July, 1906, when it reached its maximum, from which time it slowly decreased.

Our death-rate from pneumonia for the succeeding years among the negroes is given in Table 2.

TABLE 2.—DEATH-RATE AMONG NEGROES

Year	Death-Rate	Year	Death-Rate
1906	18.74	1910	1.66
1907	10.61	1911	2.24
1908	2.60	1912	1.30
1909	1.66	1913*	0.42

* First eight months.

We appointed a board to examine into this matter. This board gave a great deal of time and attention to the work and went into it very carefully. It found that no particular house or town had a continuously high rate. The rate would vary from time to time. This indicated that the variation was due to a varying factor of infection, and not to location or surroundings.

With regard to seasonal incidence, we found that the pneumonia in Panama increased from the beginning of the dry season of 1907, being the greatest toward its end, with 124 cases in April, the driest month. It diminished in number in May and June, which are wetter months, but rose again in July, which was as wet as June. It was decidedly worse in the dry season of 1907 than in the wet season of 1907; but this was opposed to its general course for 1906, for the greatest number of cases of pneumonia appeared during some of the wettest months.

Our men worked continuously in the rain, and came home soaked through at night. The majority of them were so poor that they did not have a change of clothing. They therefore slept in their wet clothes. The board tabulated those who had one suit of clothing, and those who had more than one suit. The results showed no relation. The men who slept in dry clothes had as much pneumonia as those who slept in wet.

Our barracks were arranged with tiers of bunks, and were so ventilated that the top bunk had much more draft than the others. The men were tabulated as to sleeping in top bunks, or lower bunks, with no result. The rate of pneumonia in the top bunk was no greater than in the lower.

Altitude had little effect. Though there was not much difference in our camps in this respect, some were at sea-level, others in the hills on the divide at between two and three hundred feet elevation. There was no constant difference between such camps. Some camps at sea-level had very high rates, others at the same altitude low rates. Some camps in the hills high rates, others low.

The only difference in susceptibility was shown to be governed by the length of time that the laborer had been on the Isthmus. This is shown in Table 3, which indicates that the same number of men over three months on the Isthmus who furnished two cases of pneumonia would give nine cases if they were men who had had less than three months' residence.

TABLE 3.—SUSCEPTIBILITY OF NEW MEN AND OLD MEN *

Month	No. New Men	No. Old Men	Colored Pay-Roll	Cases, New Men	Cases, Old Men	Ratio No. New Men to Old	Ratio of No. of Cases New Men to Old	Comparison of the Two Ratios
March ...	6,559	20,655	27,214	55	29	1:3.14	1:0.52	6.04
April ...	6,458	21,537	27,995	77	91	1:3.33	1:1.18	2.82
May	3,994	24,543	28,537	32	41	1:6.14	1:1.28	4.79
June ...	3,235	25,596	28,831	10	15	1:7.91	1:1.50	5.27

* By "old men" is meant those who have been over three months on the Isthmus, and by "new men" those who have not been over three months on the Isthmus.

Sum of cases among new men.....174
Sum of cases among old men.....176 — Ratio, 1:1

Number of new men.....20,246
Number of old men.....92,331 — Ratio of ratios, 4½:1 / Ratio nearly 2:9

The board found that the pneumonia was four and a half times as high among the men who had been on the Isthmus less than three months as it was among men who had been on the Isthmus more than three months. We argued from this that the question was one of immunity; that the negro who had been on the Isthmus three months became acclimatized, and acquired a certain sort of immunity. We probably get the organism slowly, and thereby acquire immunity, whereas the man who developed pneumonia had not been exposed long enough to acquire immunity when the exciting causes came along.

The arrivals on the Isthmus of steerage passengers from 1905 on are shown in Table 4.

The number of steerage passengers is a fair measure of the number of negroes coming out to the work.

We see that there is a relation between the number of newcomers and the incidence of pneumonia in 1906 and 1907. At that time all laborers were housed in barracks provided by the Isthmian Canal Commission. From 1908 to 1913 the incoming negroes were from the same areas as those who came in 1905, 1906 and 1907. During the whole period, laborers were returning to their homes and later returning to the Isthmus for work, just as is the case on the Rand. The only

TABLE 4.—QUARANTINE REPORT OF ARRIVALS AND DEPARTURES OF STEERAGE PASSENGERS FROM AND TO FOREIGN PORTS

Year	Arrivals	Departures	Increase
1905	24,202	12,904	11,298
1906	34,433	16,694	17,739
1907	36,438	17,900	18,538
1908	26,605	16,679	9,926
1909	22,851	13,445	9,406
1910	21,851	17,319	4,532
1911	21,520	17,272	4,248
1912	21,298	19,911	1,387
1913*	21,573	14,969	6,606
Totals	230,771	147,093	83,678

* Eight months only.

difference is that on the Isthmus there was for each year a decided increase of arrivals over departures, which shows that there was each year a considerable number of non-immunes arriving on the Isthmus, yet with a decrease in the incidence of the disease. The fall in death-rate from pneumonia was coincident with allowing laborers to leave the barracks provided by the commission and build for themselves cabins on the hills, or to live in the towns of the Canal Zone, and the bringing in of their families. Table 4 shows the incoming and outgoing steerage traffic with the net increase in population.

Among the 24,000 negroes coming to the Isthmus in 1905, there was a very small proportion of persons who had been to the Isthmus before, whereas among the 21,000 who came in 1912 there was a very large proportion. In 1908 our pneumonia dropped to 2.60 per thousand, and since that time it has continued to fall, though we have continued to bring in a considerable number of new employees.

During the first few years on the Isthmus, we housed our negroes in barracks containing about eighty-four men each, and of such dimensions as to give them about 30 feet of floor-space. This is ordinarily considered very crowded. In 1907 we allowed our negro laborers to scatter out along the line of the Canal, build each man his hut, with a small cultivable piece of land, and bring over his family In 1910 our negro force was 37,000. Of this force, only about 7,000 lived in barracks; the other 30,000 lived in their own establishments. To this fact of scattering I attribute the disappearance of epidemic pneumonia. I explain it in this way:

It is a well-recognized fact in military hygiene that overcrowding of a barrack is coincident with inflammation of the upper respiratory passages, which at times becomes epidemic. This was the case on the Isthmus of Panama, and doubtless is the case on the Rand. Non-immunes crowded into barracks would in the same manner develop inflammation of the upper respiratory passages, in many cases due to the pneumococcus, which inflammation would afford a portal of entry for the pneumococcus, resulting in some persons in lobar pneumonia, and in others in a certain amount of immunity. If we have eighty-five men in a crowded barrack, and the pneumococcus gets

in, the probabilities of its spreading to the other men are considerable. If the pneumococcus establishes itself in a man living in a hut alone, or with his family, it is not apt to spread to the men with whom he works, and with whom the contact is not intimate. I am satisfied in my own mind that the scattering of our negroes was the chief cause of our sudden and permanent drop in pneumonia on the Isthmus.

Other causes no doubt contribute to it. The next most important, we think, is acquired immunity, such immunity as the old boy would have as compared with the new boy. It is self-evident that the proportion of old boys to the new was much larger in the force in 1909 than it was in 1906.

We are at present endeavoring to get 1,500 new tropicals with the idea of trying the matter by experiment. Our wish is to take some one mine, place the whole number at this mine, put 500 in huts, of the remaining 1,000 inoculate 500 against pneumonia, and place the whole 1,000 in barracks. Such an experiment would not be at all conclusive, however, if tried for only a short time. For instance, the barrack in which the inoculated lived might become infected, and the other barrack and the huts remain uninfected. In this case all the pneumonia might occur among the inoculated, not because of the inoculation, but because of the accident of their infection. The experiment, however, would be useful as far as it went. If continued for a long enough time, and in a considerable number of instances, fewer men ought to become infected in the huts than in the barracks.

I recommend that the question of immunization for pneumonia as recommended by Sir Almroth Wright be more carefully looked into. So far the evidence on the subject is more or less contradictory. As tried on the Rand the inoculated do not show any greater protection than the controls, but as used at the Premier Mine in 1913, the results seem very striking. In 1912, the 17,000 inoculated had a death-rate from pneumonia of 6.89 per thousand, and the 6,700 controls a death-rate of 17.72 per thousand. The inoculated and controls were selected at random, and I can see no reasonable explanation for the marked difference between the pneumonia death-rate of the inoculated and that of the controls, except that the inoculation gave a large degree of protection to the inoculated. It has been urged that a large proportion of the vaccinated might have come, purely accidentally, from regions in which the immunity of the native was high, and a large proportion of the controls from regions in which immunity was low. As a mathematical proposition this is true. There is one chance in a hundred that this might be so. But as a practical proposition it can be thrown out and not considered.

In 1910, the death-rate from pneumonia was 27.72 per thousand; in 1911, 30.99; in 1912, 9.83, and in 1913, 7.63.

They received their last tropicals in 1910. Since that time, as was to have been expected, the death-rate has dropped. In 1913 they vaccinated all their men, and their death-rate dropped to 7.63. It is rather against the Premier that their death-rate from pneumonia in 1913 (7.63) should be just about the same as the average death-rate from pneumonia on the Rand from natives south of latitude 22—8 per thousand.

Dr. Darling has suggested that the vaccine used at the Premier may be from organisms of a different strain from those used on the Rand. This has actually occurred in the use of vaccine for typhoid fever. A body of men protected by vaccination against typhoid fever has been found *not* to have been protected against paratyphoid.

It would be useful for the Chamber of Mines to continue the experimental inoculation against pneumonia, using the different strains of pneumococci. If we had such a vaccine, as the results at the Premier seem to show, then the question of the employment of the tropical natives would be at once solved. I recommend that in future when vaccinating natives, one-half be kept as controls. By this method you would soon arrive at positive results.

In considering preventive measures it must be borne in mind that the causative agent in pneumonia is the pneumococcus, an extremely delicate micro-organism; when exposed to external influences, such as sunlight and drying it is killed in a few minutes, but when resident in the respiratory passages of those infected it lives for weeks and months.

Persons recovering, or having recovered, from pneumonia may, and usually do, carry virulent pneumococci in their mouths and respiratory passages for long periods, and may infect others indirectly by means of their sputum, or by infecting the drinking- or eating-utensils used by several persons in common, or by infecting the common water-tap or cup. It has been observed that natives when drinking from the water-tap place it in their mouths, and in this way may leave a moist film of infected spittle on the tap to be taken up by the next person using the tap. In the mines, one tap has to serve for many laborers on the level, and personal observation has shown the facility with which a line of thirsty natives may become mutually infected.

Not only are pneumococci transferred in this way from persons who have recovered from pneumonia, but it is most probable that pneumococci are acquired similarly from persons suffering from the "common cold," tonsillitis and other forms of inflammatory disease affecting the upper air-passages.

It is highly desirable, therefore, that means should be used to prevent as far as possible such conveyance of infection as is indicated above. This might be done effectively and economically by means of some of the well-known types of "bubbling" fountain, or protected taps. These taps prevent the dissemination not only of pneumonia, but also of tuberculosis and syphilis.

TUBERCULOSIS

Next let us consider tuberculosis. This disease is far too high among native miners. The report for 1912 shows that the total rate for all native miners was 5.65 per thousand for pulmonary tuberculosis. The rate at Panama, for the same class during the same year, was less than 1 per thousand. The rate for London, total population, men, women and children, was 1.03 per thousand for 1911, and for New York, 1.67 per thousand for 1911.

In addition to the deaths of natives from pulmonary tuberculosis, there is a high percentage of deaths from other forms of tuberculosis among the native laborers, as tuberculosis of the intestines and abdominal viscera.

During the year 1912, 1,168 patients with tuberculosis in all its forms, were repatriated by the Witwatersland Natives' Labor Association. It is not a high estimate to say that half of these (584) died

during this year. During the same year thirty-three patients with tuberculosis died in the W. N. L. A. compound.

Judging from findings of necropsies witnessed by Dr. Darling, I am of the opinion that a considerable number of cases of deaths reported as occurring from pneumonia, result really from tuberculosis. This, under the circumstances, is an unavoidable clinical error. The actual number of deaths from tuberculosis for the year 1912 among your 156,534 natives is probably 885 reported, 584 deported, 33 in compound, and 200 error in diagnosis, a total of 1,702.

This gives a death-rate for tuberculosis in all its forms of 10.87 per thousand per annum, of the average working force of 156,534 natives, so that the death-rate from tuberculosis in all its forms is as a matter of fact considerably higher than 5.65 per thousand for 1912, and 4.80 per thousand for 1913, as shown by the reports supplied me by the Chamber of Mines.

Estimating the deaths from tuberculosis in the same way as above, we find that in 1910 we had among natives 1,001 by report, 268 repatriated for last six months of year, 51 in compound, and 200 by error, a total of 1,520, which would give us a rate of 8.85 per thousand. In 1912, estimating as above, we have a rate of 10.87 per thousand. I am inclined to think that for the future, present conditions continuing, tuberculosis will cause you more trouble among natives than does pneumonia at present.

Overcrowding plays just as important a part in the spread of tuberculosis of types other than pulmonary tuberculosis, as it does in the pulmonary type. The same measures for its control are applicable.

Tuberculosis is caused in man by a well-known micro-organism, the *Bacillus tuberculosis*. This bacillus can be transferred from person to person in many ways. The most common way is by the sputum of the diseased person. This sputum is expectorated, dries, becomes pulverized, and the bacilli are blown about, and enter the lungs of the well person. Or, without drying, it can get on the hands of others, and thus be transferred to the mouth and enter the system. The greatest preventive measures are therefore concerned with the care of the sputum. White miners having tuberculosis should be eliminated; if elimination is not possible, they should be supplied with spit-cups, or cloths into which they can expectorate, and be individually furnished with literature explaining the danger of promiscuous expectoration. With the native miner any attempt of this kind would be impracticable. Careful routine medical examination should be made of the sick, and when a man is found to have tuberculosis he should be excluded from the mines. As far as the native is concerned, the most important single measure is that recommended for pneumonia, that is, scattering, and in the same way as recommended for pneumonia.

Disinfection in the dwellings of the tuberculous is useful and important, and should always be resorted to.

No argument is necessary to prove that by reason of close personal contact, if we have a hundred men in a room, each with 25 feet of floor-space, infection would spread more rapidly and generally than if we had fifty men in the same room having 50 feet of floor-space. It is equally evident that a larger number of persons would be infected, when infection was introduced into a room in which a hundred persons were living, than when introduced into a room in which six persons were living, the floor-space per capita being the same in the two cases.

Tuberculosis is a disease that can be particularly combated by fresh air, sunshine, cleanliness and roomy quarters.

MINERS' PHTHISIS

Miners' phthisis is a disease which has so far been steadily increasing on the Rand. The reports for 1903 show a rate of 0.05 per thousand, and that for 1912 a rate of 0.10 per thousand. This disease is essentially a silicosis, and is caused by particles of silica getting into the lung-tissue, through respired air, causing chronic inflammation, the tissue thickening until finally a considerable portion of the lung is destroyed for respiratory purposes. This condition of the lung brings about a low state of local vitality, so that an organism like the tubercle bacillus easily finds lodgment. At present on the Rand most persons with miners' phthisis die from an incidental tuberculosis implanted on a silicized lung, rather than from silicosis itself. The hygiene of this disease is obvious, that of laying the dust, so that particles of silica will not be floated in the air where they can be breathed. Some form of water-spraying apparatus is now very generally used on the Rand. I advise that such measures be generally and carefully enforced and extended. I believe that they will soon reduce miners' phthisis to a minimum.

CEREBROSPINAL MENINGITIS

Cerebrospinal meningitis is a disease that at times causes considerable mortality among native miners on the Rand. This is an infectious disease whose organism, so far as we know at present, is spread from person to person by crowding and contact. Scattering would also be the most effective sanitary measure against this disease, in addition to the general measures of cleanliness, air and light already referred to. Disinfection is probably more useful in this disease than in either of the diseases previously discussed.

TYPHOID FEVER

During the last four years you have lost 310 men on an average by death from typhoid fever. During 1912 you had 234 deaths in this class of employee, and during 1913, 249. Typhoid fever by vaccination is as preventable as is small-pox. This death-rate could be entirely wiped out at once. With your present organized force of medical men it would be neither difficult nor expensive. The vaccination itself causes nothing like the trouble to the person vaccinated as does the vaccination for small-pox. In general, there is almost no reaction, soreness or effect of any kind.

I recommend that all native employees and such of the white employees as so desire, be vaccinated for typhoid fever.

HOUSING THE NATIVE

The most serious sanitary defect that I notice in the mines on the Rand is the manner of housing the native. The quarters are much too crowded. He has in general 200 cubic feet of air-space, which would give him 14 feet of floor-space. The general objection to such crowding is that it causes the respired air to become vitiated. My great objection to such crowding is that it forces the occupants into close personal contact, and therefore largely increases the

spread of any infectious disease. This applies particularly to pneumonia, tuberculosis and cerebrospinal meningitis. A large aggregation of men in one room is objectionable in itself. It is evident that if infection is introduced into a room containing a hundred men, it is more likely to affect a larger number than if introduced into a room containing six men.

In the French army they allow about 50 feet of floor-space to a man. Recently they have largely increased their army, which has caused crowding in their barracks. I see it stated in the newspapers that epidemic pneumonia is prevailing among the men, and that the French sanitary authorities attribute the epidemic pneumonia to this overcrowding.

I am satisfied in my own mind that the scattering from large barracks into single huts and small rooms was the important measure in its effects on pneumonia on the Isthmus. For the sanitation of pneumonia I would urge a similar measure on the Rand. Place your negro laborers in individual buildings, and bring in, and place with them, their families. This measure, I feel confident, would result with you as it did with us. In the course of about a year it reduced our pneumonia death-rate from 18.40 per thousand to 2 per thousand. It would probably reduce your present rate of 15 per thousand (the highest pneumonia monthly rate for 1913) to 2 per thousand. If this is not feasible at present, the nearest approximation to it should be attempted.

What is at once feasible, it seems to me, is to extend your family locations. At present all the mines have such a location where the native lives with his women and children. Wherever I have examined into these locations the pneumonia rate and the general death-rate are low. They are always among the very best class of native rates on the Rand. We recently examined into the condition of the city location at Klipspruit. Here about 2,800 natives, men, women and children, live in neatly constructed single dwellings, more or less separated, from 50 to 200 feet apart. The whole village, both inside and outside the dwellings, was well policed, and presented a clean and attractive appearance. We had the superintendent, Mr. Smith, go over the records, selecting the male native, over 18 years of age, and give us his records both for pneumonia and for general rate. We found that for the past three years, with an average of 750 natives of this class, the pneumonia death-rate had been 1.37 per thousand, and the general rate 9.17 per thousand, while the native rate for pneumonia in the mines on the Rand for the same year (1913) was 10.05.

It is a very striking coincidence that whenever we find the native on the Rand living as he does on the Isthmus of Panama, his health-rates are approximately as good as they are on the Isthmus. When the negro on the Isthmus lived in large barracks, as does the native in general on the Rand, his health-rates were fully as bad as those on the Rand. Wherever I have inquired, the compound manager has told me that he has more applicants for married quarters than he can accommodate, and that if he had more buildings he could fill them. Let each mine therefore put up cheap but comfortable buildings, as they find they have need for them. The native hut, of which Mr. Lloyd, your superintendent of recruiting, furnished me drawings and specifications, strikes me as being excellent. It has a circular wall with thatched roof. In this type of hut, concrete floors and glazed windows I consider quite unnecessary.

I saw a large village of these huts at the Arcturus mines. They were attractive and neat in appearance, complied with the needs of sanitation, and were economical in construction. In extending locations, it would be better, from a sanitary point of view, to erect huts rather than to extend the present buildings.

In extending these locations an eye should be had to the future. They should be laid out in streets and blocks with a view to eventually putting in a water-borne sewerage system.

Eventually, in this way, a considerable portion of the force could be placed in these villages, and the barracks mainly used for the unmarried men. This would begin at once to give more room in the barrack for the highly susceptible new boy. As the barracks ceased to be needed for the unmarried native, they could be slightly rearranged for native married families. This was very satisfactorily done at Panama. As we ceased to need the barracks for our unmarried negro laborer, we transformed them economically into comfortable married quarters.

A native labor force living with families near the mines would be more stable and contented than the present force. They would be old and experienced men and therefore more efficient, and from all points of view more economical and satisfactory to the mine manager than the present force.

The economy of this method of housing native laborers might be emphasized by calling attention to the fact that recruiting men costs about $5,000,000 (£1,000,000) per annum. The greater part of this expense can be saved by the construction of locations—such as Klipspruit—or building huts of the general type of those erected by natives at their kraals.

A force of married men living in such a location would be a permanent force of skilled workmen, always available as a source of labor for the mines.

A nominal charge for such huts should be made, such a charge as would pay for the hut, say in ten years, and also keep the huts in repair. Such a location would be self-supporting and would correct the unsatisfactory health conditions of the compounds by giving more floor-space per capita to those who continue to live in them.

Public sentiment will not approve the keeping of a large body of semisavage laborers in the community in such conditions as obviously to foster sexual crimes. Both the public and the laborer will insist on the native having his women and children. If the laborer cannot have his family with him at the mines, he will, as the country develops, seek other employment where he can have them.

On the order of the government, recruiting among the tropical natives ceased last March. If we were considering the sanitation of the tropical native alone, I should still more strongly urge scattering, as much as possible, as the proper sanitary measure for him against pneumonia. This dispersion I should bring about, if possible, by putting him in a hut with his family. If this were not possible, I should put him in huts, without his family, arranged so as to give him 50 square feet of floor-space. If huts were not possible, I should put him in barracks with the smallest rooms I had, arranged so as to give him 50 square feet of floor-space.

In general, the care of the compound yards showed everywhere neatness, cleanliness and commendable care and discipline; but when we came to examine the interior of the native living-quarters the very opposite was the case.

Food was always present in dirty and unkept vessels in considerable quantities; old clothing and wearing-apparel of all kinds, soiled and dirty, was littering up everything, and litter of all kinds was stowed away under the sleeping-platforms. I was told that discipline and cleanliness were not enforced in the sleeping-quarters from the fact that the authorities did not wish to interfere with the natives to such a degree as to make them dissatisfied. This is a very good general rule, and a population of the class of the ignorant native miner should not be worried with too many and exacting sanitary regulations. Indeed, I do not see that much in the way of correction could be done, even if the native cooperated, in the present crowded condition of the barracks. But give each man 50 feet of floor-space, and he can have an individual bed and box of some kind in which he could keep his personal belongings. It would then be no hardship to require him to keep his belongings to his own bed and in his own box.

If a number of small sheds, inexpensive in construction, and convenient to the sleeping-rooms, were erected around the compound, it would be no great hardship to require him to eat his food under this shed. In the receiving compound at Johannesburg, the native is required to eat his food on a concrete platform, and no food is allowed in the living rooms. Dr. Turner tells me that there is no particular objection on the part of the natives.

I am confident that if the sanitary necessity of keeping the barracks in a cleaner condition was considered, the details could be worked out gradually so as not to interfere to any great extent with the habits and customs of the natives.

A commendable effort is being made generally to correct this condition by cleaning up, taking out refuse, destroying bugs, whitewashing, etc. But this must be done (in the nature of things) very often. In the best-kept quarters which I have seen this is done about once a month, but in a few days conditions are as bad as ever. It is not feasible to make any considerable improvement in present conditions as long as the barracks are as crowded as they are, and as long as the men are allowed to eat and keep food in their sleeping-quarters.

I recommend that each native be allowed 50 square feet of floor-space; that he be furnished with an individual bed, and an individual box in which to keep his belongings; that the barracks be divided into smaller rooms to contain not more than from twelve to fifteen men; that no food or utensils of any kind be allowed in the dormitories, and that eating-sheds be erected about the compound, located conveniently to the dormitories. A good many of the men at present keep their food from meal to meal and consume it between times. They also use the mealie porridge for making fermented drinks. If it is necessary to allow this, to each native who asked for it, a locker in the eating-shed could be assigned. The expense of such changes would not be large. The increase in floor-space would cause a large expenditure, if the force were as full as it was a year ago. If you encourage your married locations, some room would be gained in the barracks in this way. The reforms could be carried out gradually. Those compounds could first be selected in which the death-rate was high. There are a considerable number of compounds in which the death-rate has been low for a number of years. They are frequently the old compounds which the native prefers, and therefore they contain a larger number of old boys. In all the cases into which I have examined the crowding there was not so great.

These two conditions, namely, the lesser crowding and the greater proportion of old boys, generally explain the better health-rates. Such compounds I should not interfere with. In this way gradual improvement could be brought about at no very large yearly outlay.

DIET OF THE NATIVES

The ration is another thing that has impressed me very strongly in inspecting the various mines. I have never seen so large a proportion of the ration supplied by one article as is here supplied by mealie meal. The two chief components of the daily ration are 2 pounds of mealie meal and $5\,^{85}/_{100}$ ounces of meat. This I think, a great deal too large a proportion of the carbohydrates for men doing the hard manual labor that the natives do. The mealie meal might be reduced, and the meat and other articles increased.

A soldier's ration in the British Army is 16 ounces of bread, 12 ounces of meat, and also an allowance of 3 pence per day for vegetables, and other articles. A miner does very much harder labor than the soldier. I think that his diet should be at least as good.

On the Isthmus we had a great deal of trouble as to rations. There was no particular disease among our laborers that we could attribute to diet, but they seemed to be underfed, and there was constant complaint. The whole matter of food was satisfactorily settled both for the negro and ourselves when the families came and when we established commissaries for the sale of food at cost. The negro then bought what he liked in such quantities as he wished, and his wife cooked it in the manner to which they had been accustomed. At the Premier mine they have three systems of feeding going on at once. The native can either eat his food at the regular mess, buy such cooked food as he likes, or buy food and cook it himself.

At the Kimberly mines the system of food-supply is altogether that of allowing the native to buy his own food. It seemed to be very satisfactory. This would be an excellent system of feeding to adopt generally, although I prefer our system on the Isthmus, where food is supplied the native at cost. The object of this measure is to give him an abundant food-supply in such a way that he can vary it as his tastes suggest. If you attempt to make a profit on food, you by so much defeat the object of your measure.

I am inclined to attribute scurvy to the large amount of mealie meal in the ration. It has been found that beriberi is caused by making polished rice the almost exclusive article of diet. It is due not to the rice itself but to the fact that the rice is polished. In polishing, the pericarp is rubbed off, and this pericarp contains substances that are necessary in the body economy. Mealie meal, as used on the Rand, has a similar outer coating removed in the process of mill-

ing. Dr. Macaulay goes into this question, and brings some very strong evidence to prove that scurvy is due to having such a large proportion of the diet consist of the bolted mealie meal. If this is the case, it can be corrected easily and economically by having the meal properly prepared. This question should be investigated further.

On the Isthmus of Panama in 1906, each man bought his own food from a poorly supplied market, at a very high price, and cooked it himself. In 1908 he bought from a well-stocked market, at cost price, and had some one to prepare his meals.

We first started having each man take care of himself as far as food was concerned. Each laborer bought his uncooked food from the nearest native vender, and cooked it himself between working-hours. This proved very unsatisfactory for several reasons. The laborer did not have time to collect his food and cook it between working-hours. He was also too much fatigued to do it properly. Our force increased so rapidly that we consumed everything that there was in the country. We then put up stores along the line, supplying food at cost, and also kitchens where it could be bought cooked at a reasonable price. This proved a distinct improvement over former conditions, but the matter of feeding was put on an entirely satisfactory footing, both to ourselves and to the negroes, by bringing the families over, and allowing each man to put up a hut for himself and his family.

Since that time we have had no trouble as to food for the negro, or dietetic diseases among them. Each negro now gets such food as he likes at cost, and his wife cooks it for him in the manner and quantities which he likes best. Present conditions as to food are entirely agreeable to both parties. The establishment of stores by the commission and selling at low price in no way interfered with opening of stores by private persons. Such stores existed in considerable numbers at all towns and were prosperous.

SEWERAGE AND WATER SYSTEMS

Another sanitary improvement completed at about this time was the introduction of sewerage and water systems. One of the prominent causes of death among our predecessors had been dysentery. Indeed, this disease is generally prominent in tropical countries.

Typhoid fever is another disease that we knew we should have to reckon with. In the hope of protecting ourselves against these two diseases we put in eight different water systems along the 50 miles of canal. Generally for getting water, we dammed the small streams near their source in the mountains, and piped the water down to the cities and villages along the line of the canal. About twenty sewer systems were put in at these villages. The sewerage systems were limited to the villages.

We see, therefore, that several things happened about the time of the disappearance of our epidemic of pneumonia.

The men were scattered from crowded barracks to individual huts in the hills, and houses in the towns.

An insufficient, poor, expensive food-supply, badly cooked, was replaced by one abundant in quantity, good in quality, cheap, and very well cooked.

Water-supplies and sewerage systems were everywhere installed.

It is an obvious axiom of both hygiene and economy that no unnecessary tax should be placed on the strength of the native laborer. With these objects in view, he should be conveyed to his place of labor, and away from it, with as little delay and as little exertion to himself as possible.

The present bucket system of disposing of night-soil should be replaced by a water-borne system. This is possible everywhere on the Rand above surface. This bucket system promotes the breeding of flies, and the transference of diseased fecal matter by these insects. The water-borne system would be economical as compared with the present bucket system. Several of the mines have at present partial water-borne systems. I commend particularly that of the Crown mines.

Where a water-borne system is not feasible I consider a properly constructed, fly-proof, pit-closet preferable to the present bucket system. It is more sanitary and less expensive.

Underground a water-borne system seems to be impracticable from a mechanical point of view. A vault system would be a decided improvement on the present bucket system, both from a sanitary point of view and from the point of view of economy. I mean by a vault system the excavating of a small vault and placing on it a fly-proof seat wherever a closet is needed. I should use no water whatever. Allow only in the vault fecal matter and urine. When the vault is filled, close the vault and move the seat to a new location, or empty the vault with an odorless excavator. I should empty the vault or move the seat as seemed most convenient and economical. Vaults that were located on the outer workings, and that were to be used less than a year, I should think could be more economically closed than emptied. Vaults that were located near the center of the workings, and were to be used for several years, might be emptied when filled. This should be determined purely from the point of view of expense.

There would be some sanitary advantage in closing a vault rather than emptying it. I think that from an administrative point of view it would be found more economical to close a vault and build a new one, rather than to empty it. The length of time that a vault would last would be determined by its size.

It has been objected that there would be leakage through cracks in the rock from these vaults into the mine below. There would be so little fluid, the urine only, that I do not believe this would be the case. If the deposit were found to be too fluid, this condition could easily be remedied by the use of dry earth or some similar drying material. I have seen this system used on a large scale in cities with little objection as to odor or inconvenience. The great sanitary objection to the present bucket system is against the daily handling and carrying through the mines of fecal matter, and the necessary fouling and disagreeable odors that go with such a system. The great sanitary advantage of a vault system in such locations as the mines is that the excreta are permanently disposed of as soon as deposited.

The economical disadvantage of the bucket system lies in the considerable expense of daily transporting the buckets to the surface, emptying, cleaning and returning, as well as the expense of plant. The only expense of the vault system would be that of originally digging the vault and then of closing it.

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A system of septic tanks might be considered if it should be found more economical than the vault. I think that such a system could be planned so that there would be no objection to the effluent passing into the general drainage system.

THE FLY NUISANCE

I commend the effort at some of the mines to abate the fly nuisance by trapping and otherwise. All eating-houses, kitchens, dining-rooms, or wherever cooked food, or food, such as fruit, that is eaten uncooked, is exposed, should be well screened as a protection against these insects. In addition, traps, fly-paper and such devices as tend to destroy flies that have gained entrance to these places should be used. The present crusade against fly-breeding should be encouraged in every way. Such a movement is one of the best educators that I know of.

The disposal of garbage is generally satisfactory. It is in general dumped at some out-of-the-way place sufficiently removed from the mine so that the odors and the flies are not troublesome. I should recommend, however, the general use of crematories. The crematory system is generally more satisfactory than the dump, from the fact that it does away with fly-breeding and disagreeable odors. In many cases it is more economical from the fact that the haul is much shorter in the case of the crematory.

Alcohol for the native, I believe, is an unmitigated evil. It is in no way necessary for his health; in fact, it is always hurtful.

THE LIQUOR QUESTION

On the Isthmus we had our laboring force located on the line of Canal about 50 miles in extent. In this distance we had about twenty towns. At first we allowed as many liquor establishments as chose to pay the high license, $1,200 per year. As time went on we gradually abolished saloons in town after town, till last year, liquor-selling was finally abolished on all the Zone. Saloons were gradually abolished in district after district, generally at the request of the engineer in charge of the working force in that district.

The two Panama towns of Colon and Panama, at the northern and southern end of the Canal, are not under the jurisdiction of the commission as far as regards liquor-selling. There is no restriction on an employee going to these towns and getting liquor as he wishes and bringing it out into the Zone to his own home. The only prohibition is that it must not be sold in the Zone. But to get liquor he has to make a longer or shorter railroad trip, and go to considerable effort. Our experience has shown that there are a considerable number of men who do not care enough for liquor to make the effort, and therefore do without. Of course there are a large number who bring liquor out and drink as much as ever; but on the whole our prohibition of its sale has largely decreased drunkenness. It has increased the efficiency of our working force so much that generally the men in charge of the laborers in the different districts have asked to have their districts included within the prohibited area. I believe that it would be best for the native on the Rand to have no alcohol at all.

That alcohol is not a necessity for the native is evidenced by the condition of affairs at the De Beers mine. There they have compounds that are kept rigidly closed. Neither kaffir beer nor any other alcohol is given him. Yet he remains in perfectly good health and seems contented. He likes the life at Kimberly better than he does that on the Rand. This is evidenced by the fact that their force is always full, yet they do not have to recruit, whereas on the Rand the opposite is the case.

One cannot see these mines, or look over their statistics, without being struck by the many advantages a closed compound has in the management of these semicivilized natives.

MEDICAL SERVICE

Attention should be given to the methods at present in vogue of getting the East Coast boy from his home to the mines. In my opinion there is opportunity here of the native becoming infected with both pneumonia and tuberculosis before he reaches the mines.

In any case some machinery is needed for carrying out a system of sanitation. You have on the Rand now about fifty-four mines, each entirely independent as to the sanitation and care of the sick. About thirty-eight physicians are employed by these mines. Each is doing the same work as the other. That is, each man on his own mine has to do the surgery, the medicine, the pathologic work, the sanitary work and the Roentgen-ray work. It is impossible for each man to be specially qualified in all these branches. You have sixty-two hospitals, treating 2,150 patients. None of these hospitals is equipped or manned in a first-class manner. In general, the larger the hospital the better manned and equipped. The nursing force in native hospitals is made up of natives who have neither the intelligence nor training for such work. All is being done, probably, that can be done under the present system of numerous small hospitals. It is impracticable from an economic point of view to equip all these small hospitals with a first-class instrument outfit in every direction, and if it were possible economically, one doctor could not acquire the skill and experience for using them all. If a combination could be effected, a much higher state of efficiency could be brought about at no increase of cost. If all the sick could be brought together into one hospital, they could be cared for at less cost than in sixty-two hospitals. You could select the best qualified doctor among your present men, and put him in charge of the surgery. With such a service as he would have, in the course of a few years, he would become the peer of any surgeon anywhere, and you would be able to give your employees as good surgical attention as the very wealthiest could command. You could afford to equip such a hospital with first-class surgical appliances of every kind at a less cost than the moderate supply at present given to the sixty-two hospitals now in use. The same could be done on the medical side.

In the Bacteriological Institute you already have an institution and personnel that could be used for the pathologic work, and the patient could be brought to hospital by the railroad, which connects with all the mines, and by motor ambulance and wagons.

With 200 white trained nurses, male and female, in such an institution, you could select your subordinate native nurses from the more intelligent and better educated natives, and thus secure a first-rate nursing force.

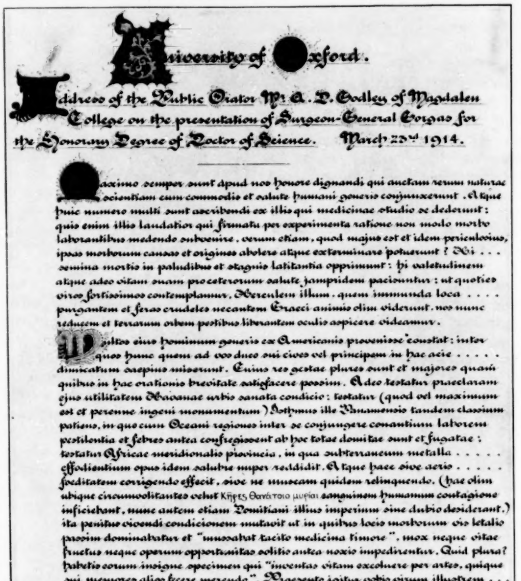
Such a hospital scheme has been adopted by us on the Isthmus for our force of 60,000 men scattered along a railroad 50 miles in extent, and it has been for us both economical and satisfactory. I believe that you could adopt the same plan for your 200,000 men, who, it seems to me, are in a comparable condition.

The construction of such a hospital need be no more expensive than your barrack construction, if the hospital were built in single story on the pavilion plan. I believe that eventually you will have to provide more barrack space, and the present hospitals could be used as such.

In a large hospital of this kind you could keep in better touch with the character of disease affecting the employees, which is in itself a considerable sanitary advantage.

With a pathologic department making all the necropsies, you would have greater protection than you now have on the question of paying claims, and greater accuracy and uniformity in diagnosis.

You could select the men best fitted and place them in charge of the sanitary work. These men should devote their whole time to their work, and be in thorough and constant touch with the sanitary conditions of all the mines. One man should be chief, and on the staff of the Chamber of Mines; he should be responsible to the Chamber of Mines, and entirely independent of the management of the individual mines. There need be no conflict with the present public officials in such an organization. If such an organization were in effect now, when the chief sanitary officer of the Chamber of Mines found a mine not complying with the present public sanitary ordinance, he would report the matter to the Chamber of Mines. The Chamber of Mines could either take the matter up with the mines concerned, or directly report the defect to the medical officer of health of the district. If it were the enforcing a sanitary measure not covered by public ordinances, but which had been authorized by the Chamber of Mines, the chairman of the chamber could take the matter up directly with the mine management. For instance, if the mines at present associated had authorized the Chamber of Mines to enforce as far as possible dispersion, the measure which I recommend for the sanitation of pneumonia, the chief sanitary officer would be in constant touch with all the compounds. He would have in view the desirability of increasing the married location as rapidly as possible, so far as was compatible with economy and expediency. If, under these circumstances, the chief sanitary officer found a mine where the married location was full, and there were applicants on hand for additional married quarters, he would urge the erection of additonal accommodation on the mine management. If a satisfactory agreement could not be arrived at between them, the chief sanitary officer would take the matter up with the Chamber of Mines.



University of Oxford.

Address of the Public Orator Mr A. D. Godley of Magdalen College on the presentation of Surgeon-General Gorgas for the Honorary Degree of Doctor of Science. March 25th 1914.

Maxime semper sunt apud nos honore dignandi qui auctam rerum naturae scientiam cum commodis et salute humani generis conjunxerunt. Atque huic numero multi sunt ascribendi ex illis qui medicinae studio se dederunt: quis enim illis laudatior qui firmatis per experimenta ratione non modo morbo laborantibus medendo subvenire, verum etiam, quod majus est et idem periculosius, ipsos morborum causas et origines adire atque exterminare potuerunt? Hi . . . semina mortis in paludibus et stagnis latitantia opprimunt: hi valetudinem atque adeo etiam suam pro ceterorum salute jampridem paciscuntur: ut quotiescunque virorum fortissimorum contemplamur, Herculem illum, quem immunda loca . . . purgantem et feras crudeles necantem Graeci animis olim viderunt, nos nunc vehementi et tenaxum odium perditos liberantem oculis aspicere videamur.

Ut ultro cuius hominum generis ex Americanis provenisse constat: inter quos hunc quem ad vos duco sui cives et principem in hac acie . . . . . dimicatum saepius miserunt. Cuius res gestae plures sunt et majores quam quibus in hac oratione brevitate satisfacere possim. Adeo tetatur praeclaram ejus utilitatem Havanae urbi sanatae condicio: tetatur (quod est maximum est et perenne ingenii monumentum) Isthmus ille Panamensis tandem classium patens, in quo cum Oceani regiones inter se conjungere conantium laborem pestilentia et febres antea confugientes ab hoc totae domitae sunt et fugatae: tetatur Africae meridionalis provincia, in qua subterraneum metalla . . . . . effodientium opus idem salubre nuper reddidit. Atque haec sive aeris . . . . . foditatem corrigendo effecit, sive ne muscam quidem relinquendo. (Hae olim ubique circumvolitantes ochet Κήρες θανάτοιο μυρίαι, sanguinem humanum contagione inficiebant, nunc autem etiam Demitiani illius imperium sine dubio desiderant.) ita penitus vivendi conditionem mutavit ut in quibus locis mortuum vis letalis passim dominabatur et "nunquam tacito medicina timore", mox neque vitae functus neque operum opportunitas solitio antea noxio impedirentur. Quid plura? habetis eorum insigne specimen qui "inventas aliis excolere per artes, quique sui memores alios fecere merendo". Praesente igitur cohortis virum illustrem . . . Willelmum Crawford Gorgas, Medicinae Doctorem, in exercitu Americano . . legati munere fungentem, ut admittatur ad gradum Doctoris in Scientia . . . . honoris causa.

Fig. 1.—Address of the Public Orator of the University of Oxford on the presentation of Surgeon General Gorgas for the honorary degree of Doctor of Science. Made on sheepskin in four colors (see editorial department). In the original the following English translation is appended. That it may be more easily read we have reproduced it letter for letter.

THOSE are most to be honoured by us who have increased knowledge and thereby promoted the welfare of the world. Such are many students of medicine: it is a fine thing to have the scientific knowledge which can cure disease: but theirs is a still finer if more dangerous task who can extirpate the causes from which disease springs. It is such men who destroy the seeds of death which are bred in swamps, risking their health and even their lives to serve their fellows. These heroes are a modern realization of the legend of Heraclu, the cleanser of foul places and the enemy of evil beasts.

THE eminent American who you see today has like many of his countrymen fought in the forefront of the battle. His achievements are too numerous for me to relate in detail. Suffice it is say that it is he who cleansed Havana: it is he who put fever and pestilence to flight in the Isthmus of Panama, and made possible the long-thwarted construction of the great inter-oceanic waterway: it is he who has recently improved the sanitary conditions of the South African mines. He purified foul air; he waged war on the myriad swarms of death disseminating mosquitos. The result has been an amelioration of the conditions of human life in plague haunted districts, where once "in silent fear the helpless healer stood", and it is now possible to live in comfort and to work with advantage. There can be no better example of those "Whose skill hath served the human lot to raise, and won a name that endless ages praise."

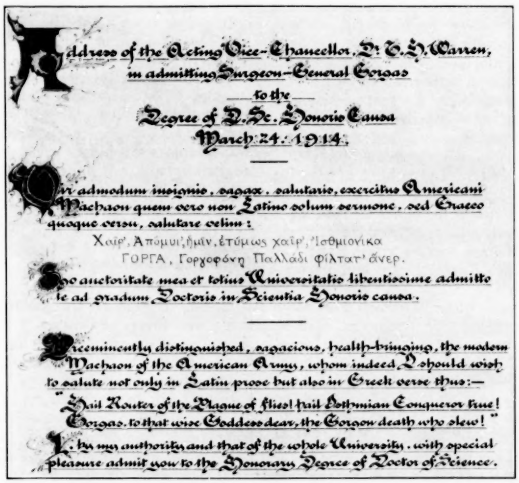
Or, if the chief sanitary officer found the pneumonia rate high in any particular compound or building, he would see that the proper corrective measures, as outlined above, were applied. On the other hand, in compounds and buildings in which the health-rates were satisfactory, he would not make any change. Such effort applied for a year or two would gradually bring about a uniform system of sanitation. If you had had such a system for the past few years, a sufficient force constantly devoting their whole time and attention to sanitation, you would have by this time reduced pneumonia to a minimum. If it were adopted now, I believe that at the end of a few years pneumonia would be reduced to a minimum. If it were feasible to adopt the whole scheme as outlined, which is the scheme that we used at Panama, I see no reason why the results should not be the same, the rapid reduction of pneumonia to a minimum. Your native labor force is evidently undergoing a gradual process of immunization. In 1903 and 1904, your total rate from pneumonia was 25.31 per thousand.[1] For the first nine months of 1913 this had fallen to 8.8 per thousand per annum. The fall has been more rapid during the last months of this period, on account of the stoppage of the introduction of the more susceptible native from the tropical regions north of latitude 22. This process will continue going on for several years till the whole of the native laboring population reaches the state of immunity that the Cape native has now. This, I take it, is the maximum that the native is capable of reaching under your present sanitary conditions. I think that this could be still further reduced by the sanitary improvements suggested. I base this opinion on our experience on the Isthmus, where the negro pneumonia rate has been reduced from 18.74 in 1906 to 0.42 for the first eight months of 1913. During one month in 1906, it was higher than it has ever been on the Rand for a similar body of men, and for a similar period, 43.41 per thousand. Meanwhile, if you introduce the native from the non-immune regions, your rate will go up. This, I think, could in great part be prevented by housing the tropical native in huts as suggested, and by furnishing him with cooked or uncooked food to be purchased as he liked. In the course of a year or two he would acquire immunity, and would then be on the same footing as a boy from the South. The success of any system of sanitation which is more or less new to any locality will depend a great deal on the choice of the man who has the charge of carrying it into execution. If he believes in it, has tact, and is enthusiastic and persevering, it will succeed. If he is discouraged by difficulties and opposition, he will fail even if his system is correct. He will find many men who have ideas of their own on these subjects, and who will point out the impossibility of carrying out the plans agreed on. It will be the health officer's business to familiarize himself with all the details involved and to find reasonable means for meeting reasonable objections.

Of these sanitary recommendations, I consider that of increasing the floor-space to about 50 feet the most important and pressing, and by far the best way of doing this to be the village hut system and the introduction of families. If this particular method cannot be carried out, effort should be made to come as near it as feasible.

Second in importance, I consider improvement in the hospital system and care of the native sick. This can be best carried out by a central hospital. If a central hospital is not feasible, such concentration of hospitals as is possible should be made.

The third in importance is the establishment of a central sanitary bureau or department under the Chamber of Mines, the head of this department to represent the mines on all sanitary questions.

The present regulations regarding matters of sanitation should be revised so that the sanitation of the mines might be accomplished by the authority of one official, government or municipal, instead of with five different interested parties, as is now the case.


Address of the Acting Vice-Chancellor, Dr. C. H. Waren, in admitting Surgeon-General Gorgas to the Degree of D. Sc. Honoris Causa March 24. 1914.

Vir admodum insignis, sagax, salutaris, exercitus Americani Archon quem vere non Latino solum sermone, sed Graeco quoque versu, salutare velim:

Χαῖρ', Ἀπόμυι', ἡμῖν, ἐτύμως χαῖρ', Πεθμονίκα
ΓΟΡΓΑ, Γοργοφόνη Παλλάδι φίλτατ' ἀνερ.

Quo auctoritate mea et totius Universitatis libentissime admitto te ad gradum Doctoris in Scientia Honoris causa.

Recemincutly distinguished, sagacious, health-bringing, the modern Archon of the American Army, whom indeed, I should wish to salute not only in Latin prose but also in Greek verse thus:—

"Hail Router of the Plague of Flies! Hail Pythmian Conqueror hail!
Gorgas, to that wise Goddess dear, the Gorgon death who slew!"

I, by my authority and that of the whole University, with special pleasure admit you to the Honorary Degree of Doctor of Science.

Fig. 2.—Address of the Acting Vice Chancellor in admitting Surgeon General Gorgas to the degree of Doctor of Science. Reproduction of an illuminated manuscript made upon sheepskin in four colors: red, gold, blue and black.

1. Final Report of Mining Regulation Commission, i, Table 1.

Report of Tuberculosis Commission in Kentucky.—Kentucky, by an act of the legislature, established a commission in 1912 for the study of tuberculosis. The first report of that commission, a cloth-bound pamphlet of sixty pages, sets forth what has been accomplished. The work so far has been chiefly preliminary and educational. An exhibition car and moving-picture exhibit, teachers' institutes, a nursing service and the distribution of much printed matter have been some of the means employed. Special county campaigns in cooperation with local organizations have also been conducted. The further work of the commission will consist not only in keeping up the educational campaign, but also in the establishment of local sanatoriums in the districts into which the state is to be divided. The report shows that much interest has been aroused and much good work done.

THE TREATMENT OF HEMORRHAGIC DISEASE OF THE NEW-BORN BY DIRECT TRANSFUSION OF BLOOD

WITH A CLINICAL REPORT OF FOURTEEN PERSONAL CASES

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The chief causes of this condition are: syphilis, infection, hypoplasia of the coagulating elements of the blood and asphyxia. External factors, such as parity, the fetal presentation, duration of labor, complications of labor, obstetric operations and chloroform, are of minor importance. Syphilis, according to Holt, is a causative factor in from 2 to 6 per cent. of the cases, contrary to a generally current idea that syphilis is always the cause.

The pathology of this condition is yet rather obscure. In nine personal post mortems, Townsend states that there were no gross lesions except the hemorrhages, and in one case the blood-culture was negative. He also reports eighty-one post mortems from the literature, in most of which no lesions of any sort were found, except hemorrhages. In a few cases the following lesions were present: lesions of syphilis, enlarged spleen, enlarged liver, inflammation of the umbilical and portal veins and acute fatty degenerations.

Some cases give a positive and others a negative blood-culture. The bacteria found are the common ones. Wassermann reactions have been made in a few cases, and are positive in some and negative in others. The chief pathologic lesions are the same as the clinical lesions, namely, hemorrhage and its consequent anemia.

The symptomatology is quite striking. In some cases there are a few premonitory symptoms, such as restlessness, refusal to nurse and a slight elevation of temperature; the chief symptom, however, is spontaneous hemorrhage. The site of this hemorrhage may be from any of the following sources: intestines, stomach, mouth, nose, navel, ecchymoses of skin, cracks of the skin, pressure-points, as heels and sacrum, meninges, genito-urinary tract and eyes.

As the hemorrhage persists, there is a progressive whitening of the child's skin and a gradual drying up of the tissues. The face becomes pinched; the muscles become weaker and weaker; the pulse becomes rapid, thin and weak; respirations are deep and sighing; the cry is weak, it may even be a whine; coma comes and death soon follows.

The diagnosis is very easy, as there is no other condition that even simulates this disease, except traumatic hemorrhage.

In hemorrhage of the gastro-intestinal tract, inspection of the stool in the diaper shows a black tar-colored mass with a pink fringe around the edge. The differential diagnosis of these conditions is of minor importance. The treatment is the same whether the case is one of hemorrhagic disease of the new-born, Winkel's disease, Buhl's disease, jaundice with hemorrhage or hemophilia. Brown and Swift divide these cases into three clinical types, namely, the umbilical, the seromucous and the purpuric, with a mortality of 60, 50 and 22 per cent., respectively. This was before the use of serum and direct transfusion of blood.

PROGNOSIS

The hemorrhage usually appears from the second to the fifth day of life. The earlier the onset of the hemorrhage, the more serious the prognosis. In luetic cases it usually appears from the seventh to the ninth day. One of the chief terrors in this disease arises from the fact that in half the fatal cases death occurs suddenly within twenty-four hours or less from the onset of the bleeding; hence, if the child is to be saved, it must have immediate attention. Townsend reports 32, in which 25 patients died and 7 recovered; 9 of those that died lived less than a day from the detection of the bleeding, and 4 lived only one day. It must not be forgotten, in the bowel cases, that the amount of blood that is vomited or passed by rectum does not represent the patient's entire loss of blood. The intestinal tract may be full of blood and the amount passed in the stool will be only a small percentage of the total blood lost to the baby.

The cases in which there is bleeding from the bowel are often quickly fatal, the entire clinical course being only a few hours; the shortest clinical course in my series was four hours from the discovery of the bleeding to the virtual death of the baby. Frequently the babe will nearly bleed to death into the bowel or stomach before any of the blood is passed by rectum or vomited. In the umbilical and purpuric types, the hemorrhages, being external, are discovered earlier, and the loss of blood can be accurately estimated. According to Dr. Jacobi, the total blood in a baby is equivalent to one-nineteenth of its body-weight.

Using this as a basis, a baby has approximately 1 ounce of blood to an adult's quart. Hence, a hemorrhage of 1 ounce in a new-born baby is equivalent to 1 quart in an adult.

TREATMENT

In the treatment of hemorrhage of the new-born, there are three indications: First, the hemorrhage should be stopped; second, the lost blood should be replaced; third, the infection should be overcome. Transfusion of live non-clotted blood meets all these indications in an ideal manner. Transfusion stops the bleeding at once, replaces the blood lost and gives the baby fresh complement and antibodies to aid it in overcoming any infection that may be present. Some of these cases are due to asphyxia and consequent fatty degenerations.

A well-transfused baby has more red blood-corpuscles than normal, each one capable of carrying oxygen to every portion of the baby's body, and this oxygen is available to prevent further fatty change and to remove that already formed. Direct transfusion of live, non-clotted blood from a healthy adult meets all the indications in hemorrhagic diseases of the new-born, better than any other method. Direct transfusion of blood will cure in practically every case. It is never too late to transfuse if there is still the slightest auricular beat, or even if the heart has apparently stopped for a short time; by means of a transfusion of blood the heart may be started again (Case 1). The patients who bleed from the bowel should be transfused early, because of the liability of sudden death from a massive hemorrhage into the bowel. Most surgical operations are of a destructive character and accompanied by a shock, which requires a certain amount of bodily vigor to overcome. Direct transfusion of live, non-clotted blood is not a destructive

TABLE 1.—DETAILS OF AUTHOR'S CASES

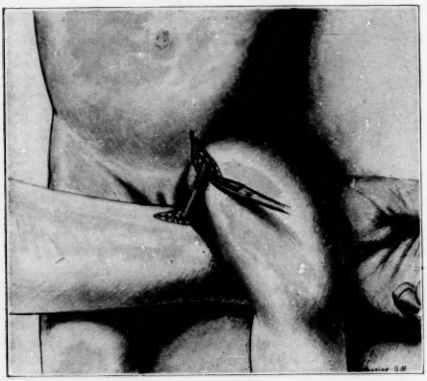
Case	No. of Children	Weight at Operation Lbs. Oz.	Age of Baby Hours	Source of Hemorrhage	Treatment Before Operation	Duration of Hemorrhage, Hours	Condition Before Transfusion	Condition During Transfusion	Condition After Operation	Remarks	Ultimate Results
1. Dr. DeLee	2	.. ..	48	Rectum; stomach	None	4	Almost pulseless; intense pallor; comatose	Heart not audible for 5 minutes	Very red; strong	Heart was heard about 15 seconds after transfusion was started. This babe was practically brought back to life. Gained 1 ounce per day for first seven days after transfusion	Recovery
2. Dr. Bellows	4	.. ..	34	Mouth; rectum	None	26	Anemic	Skin became red	Normal	Weighs 25½ pounds at 22 months old, fine healthy boy	Recovery
3. Chicago Lying In Hospital, Dr. Horowitz	1	7 2½	9*	Bladder; circumcision wound	Clamps; sutures	24	Pale; very anemic	Became pink; first ear, cheeks, general	Normal	Took the breast three-fourths hour after transfusion	Recovery
4. Dr. Woods	2	5 1	20	Mouth; rectum	Gelatin; horse-serum	5	Anemic; comatose	Color better; still stuporous	Somewhat stronger but not much	Luetic parents. Baby's blood contained staphylococci and gave a + Wassermann.	Death five days after transfusion
5. Dr. H. M. Stowe	..	6 2	24	Circumcision wound	None	†	Very anemic	Color red; stronger	Excellent	Cesarean section baby. Ether used as anesthetic	Recovery
6. Dr. Gill	1	.. ..	72	Rectum; stomach	None	48	Very weak	Became red	Good	Delivered by high forceps. Progressed normally after transfusion	Recovery
7. Dr. Roberts	1	.. ..	72	Rectum	None	48	Anemic	Became red; Stronger	Excellent	Nursed mother one hour after transfusion. Now is a fine baby	Recovery
8. Dr. Bellows	2	4 ..	7*	Umbilical cord, mouth skin, finger-tips, heels, sacrum	Umbilical cord buried	48	Very weak; very anemic	Very red; stronger	Cried lustily; quite strong	First baby died of lues. Patient had condylomas, snuffles and macules on the skin	Death nine days after transfusion
9. Dr. Knapp	1	8 ..	10	Bowels; mouth	Horse-serum	72	Grave; almost gone	Gradually improved	Greatly improved	Passed old blood for two days, otherwise normal	Recovery
10. Dr. W. L. Ruggles	7	5 ..	72	Frenum of tongue; intestine	Normal salt; horse-serum	48	Exsanguinated	Pulse aflicker; gasps at long intervals	Excellent	Regained original weight at age of 4 weeks; perfectly well. Bleeding from tongue ceased at once, the mouth filling with a dense black clot. This was removed and the area was dry.	Recovery
11. Dr. Piper	7	9 5½‡	40	Bowels	None	12	Thirsty; restless; crying constantly	Became red; abdomen became prominent	Very good, gained 14¼ oz. in weight	Stools normal thirty hours after transfusion	Recovery
12. Dr. Cleary	2	.. ..	72	Bowels, stomach, mouth, subcutaneous	Horse- and human-serum	48	Poor; very anemic; very weak	Improved as blood flowed in	Excellent	Treated with human serum for 30 hours. Had massive hemorrhage and almost died before transfusion. Weighed 10½ pounds at 4 months	Recovery
13. Dr. Cleary	1	6¼ ..	36	Bright blood from bowels	Horse-serum	9	Restless; dried up; very anemic and weak	Red blood passed by bowel; improved	Good; color fine	Bright red blood by rectum on the table. No more red blood passed. Weighed 7½ lbs. at age of 20 days	Recovery
14. Dr. McQuarie	2	7¼ ..	96	Intestine	None	12	Pale; cold; unable to nurse; very feeble	Became red, then blue, then intense red all over	Fine; red all over as in scarlet fever	Nursed one hour after transfusion	Recovery
15. Drs. Marcusson and Dorland	1	.. ..	6*	Bowel	Gallic acid; adrenalin; stypticin by hypo	96	Very anemic; very weak; marked pallor; fed with medicine dropper	Became red; cried lustily	Very good; strong; nursed at once; no more blood	Continued to gain; nurses and in every way is strong and well; nursed immediately after transfusion	Recovery

* Days. † Unknown. ‡ With clothes.

operation; instead of inducing shock, the transfusion overcomes shock. The postoperative condition of the baby after direct transfusion of blood is very much better than the preoperative condition.

CLINICAL PICTURE

When first seen a bleeding baby is anemic, pale, weak, restless, passing tarry stools frequently and having a dried-up appearance. Later on the baby becomes limp and can hardly cry, and is as white as the proverbial sheet, blood is oozing from the mouth or from the navel, and there are purpuric spots scattered about more or less diffusely over the skin. The diaper is full of a black tarry mass, which may show red blood around the edges. During the progress of the transfusion, the child's color gradually becomes pink, then red, first on the lips and ears; then little pink spots are scattered diffusely over the body, and finally, after the baby is filled with blood, may become as red as an ordinary scarlet-fever patient. The hemorrhage from the various lesions cease as if they had been clamped with artery-forceps; by the time the transfusion is completed, the lesions are absolutely



Position of baby and the arm of the donor in direct transfusion. The radial artery of the donor and the femoral vein of the baby are used for the transfusion, which is done according to the Crile technic.

dry. In the wound that is made on the baby to dissect out the vein, one can note the formation of a firm, hard clot. When the wound is first made, the blood that flows looks like poor red ink. The coloring-matter seems to be in little particles floating in the serum. As the transfusion progresses, the blood becomes redder and redder, and finally the wound becomes filled with a firm, hard clot. Simultaneously with the color-changes in the skin, there is a great improvement in the baby's general condition. The cry becomes vigorous and he kicks with more strength; when the wound is being sewed, he makes a great protest every time the needle is passed. Finally, when the babe is taken back to his mother, he is strong enough to nurse and weighs from 8 to 14 ounces more than he did before the transfusion. After the operation, the baby nurses and sleeps quietly, the restlessness is gone; the temperature drops to normal, the old blood is passed out of the intestine in a day or two and the babe gains weight as fast as a normal babe, or even a trifle faster.

MORTALITY

In my series of cases there have been no deaths from hemorrhage. Two patients died of syphilis, one five days and the other nine days after transfusion. My cases varied in severity from one in which the patient was practically brought back to life, to others in which there was less immediate danger. If we compare this mortality with that of cases treated by other methods, we find that the same types of syphilitic patients die and that in severe bowel cases the patients die as in most of the other types of cases that are treated late. Transfusion cures in these bowel cases and all the late cases provided it is done before the baby is actually dead. (In three cases in which I have been called I found the baby dead.) Direct transfusion of blood has cured after all other methods failed. My plea is to transfuse early and take no chances of a sudden hemorrhage before anything can be done, as almost happened to me in Case 12.

The amount of blood received by the baby in Case 11 was 14¾ ounces by weight. In Case 12 the baby was weighed just before the transfusion; twenty-four hours after the transfusion he weighed 15 ounces more. This represents 421.5 c.c. of blood in Case 11 and 428.5 c.c. in Case 12. Some may be inclined to doubt these weights, as at first glance they seem rather excessive. To confirm them I made the following experiment: A dog weighing 7½ pounds without any preliminary bleeding was transfused from a dog weighing 15 pounds. The time of transfusion was five and a half minutes. At the completion of the transfusion, the abdomen of the recipient was rather prominent, the mucous membranes of the mouth were very red, and the dog had gained 18 ounces in weight. The donor was practically dead at the completion of the transfusion. Hence, this small dog contained all of his own blood and all the blood from a dog twice as big as himself. The recipient recovered from the anesthetic and was in excellent physical condition, in no way the worse for having received this large amount of blood.

After transfusion, fresh blood disappears from the stool at once, showing cessation of hemorrhage; tarry stools may continue from ten to forty hours after transfusion, being the old hemorrhage gradually expelled. One of my patients the second day after the transfusion had one stool which contained a few flecks of bright blood (Case 1).

In hemorrhage of the new-born the patients are not hemophiliacs; they are not bleeders in after-life at all. All sorts of operations have been performed on these babies from one week to several months after the bleeding has ceased, and there has been no extraordinary hemorrhage. These children grow and become normal healthy persons. Rapidity of transfusion should be considered carefully; if the blood is allowed to enter the vascular system of the baby too rapidly, there will be a temporary dilatation of the heart and the baby will become blue about the face and on the feet and hands. When this occurs, the blood-flow should be stopped until the red color returns. Patient 5 had a double femoral vein, an anatomic anomaly that complicated the operation considerably. The smallest baby was Patient 8, weighing 4 pounds. In Case 1 the heart could not be heard for about five minutes before blood was transfused. The heart was heard a few seconds after the flow was started, and in a few seconds more the heart-beat was visible.

The father was the donor in ten cases, the mother's half-sister in one and a non-relative in three.

The blood-vessels used were the radial artery in seven cases and a forearm vein in seven cases on the donor; on the baby the femoral vein was used in four instances and the jugular in ten.

The duration of the transfusion varied from five to fifteen minutes. In the case that took fifteen minutes, Case 11, the father fainted, reducing his blood-pressure so low that it took longer to fill the baby with blood.

Table 2 shows the cases that have been reported in the literature. In their essentials they are all exactly like my own cases, details of which are given in Table 1.

TABLE 2.—CASES FROM THE LITERATURE

Reporter	No. Cases
Soresi, New York	9
Vincent, Boston	7
Cooley and Vaughan, Detroit	1
Bernheim, Baltimore	1
Murphy, Boston	1
Berg, New York	1*
J. J. Hubbard, Boston	1
Alexis Carrel, New York	2
V. D. Lespinasse, Chicago	14†
Total	37

* Syphilitic and died.
† Two syphilitic patients; both patients died. Three deaths and thirty-four recoveries.

CONCLUSION

Direct transfusion of blood stops the bleeding, restores the lost blood and aids in overcoming infection. Direct transfusion of blood has cured where all other methods have failed. Transfusion should be used early, but so long as there is a spark of life evident, it is never too late to transfuse.

The experimental part of this work was done in the Laboratory of Experimental Surgery of Northwestern University Medical School.

7 West Madison Street.

COMPOUND FRACTURES OF THE BONES OF THE EXTREMITIES *

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This paper may be better followed and understood if at the outset its matter is indicated in the following postulates:

1. In civil practice a compound fracture is always not only a solution of the continuity of a bone, but also a lacerated wound of the soft tissues in continuity from the periosteum to, and including the skin.

2. Violence necessary to produce a compound fracture of the bone of an extremity must be very great; hence the traumatism is extensive. Commonly the bone is comminuted and the laceration of the soft tissues very severe.

3. Compound fractures are practically always infected wounds.

4. The management of these injuries must include the treatment of a fractured bone and the treatment of a more or less extensive infected lacerated wound of the soft tissues of the same area.

An examination of 2,089 fractures admitted into St. Luke's Hospital shows that 800 of these fractures were compound. In regions where large manufacturing establishments are located, and also where railroads are many and active, the relative frequency of compound fractures to all fractures is therefore 1:2.6, or 38 per cent. of the fractures.

The management of compound fractures of the extremities must resolve itself into two general considerations, namely, (1) the treatment of the general condition of the patient brought about by the injury; (2) the treatment of the injury itself.

A patient's reaction to these severe traumatisms depends on many individual peculiarities, on his environment and on the circumstances of the injury. Individual resistances to psychic shock, to "anoci-association," to loss of blood, must all enter into consideration. The horrors of a severe railroad or factory wreck and the conditions of the locale of the accident have also their effect. In short, a compound fracture, as every other disease or injury does, varies in every case, and should be treated as individual. The treatment must be adapted to the circumstances of each case, not the case adapted to any set method of procedure. This I consider a most important matter and I try to emphasize it on all occasions.

FIRST AID

The intelligence and skill of a practitioner in many instances, will be taxed to the utmost to meet the necessities of first-aid treatment of compound fractures. One cannot too much emphasize the importance of the proper initial treatment of these injuries. As I have said so often, the fate of the limb and perhaps the life of the patient depend on the manner of the first aid.

First, the general condition of the patient must be gauged as accurately and rapidly as possible. Stimulants may be necessary and should be used (alcohol is not a stimulant and should not be given). An analgesic should be given; as a rule, morphin, in full dose, combined with a small dose of atropin and given hypodermatically, I think, is the best. The control of hemorrhage should be sedulously sought. If practicable to avoid it, a tourniquet of any kind should not be used to control hemorrhage in these cases. If nothing else avails and a tourniquet must be used it ought to be applied some distance away from the seat of fracture. In cases of compound fractures of the bones of the legs, for instance, the tourniquet should be applied to the lower third of the thigh, or if of the bones of the forearm, to the lower third of the arm. An elastic constrictor is best and much safer.

Hemorrhage may as a rule be controlled and at the same time another indication, namely, protecting the wound, may be carried out, by packing the open wound with sterile gauze or any sterile fabric, placing thick compresses of sterile cotton wool or any other clean material over the wound and bandaging it firmly in place, from the extremity, over the wound, and to at least six inches above the fracture. Great care must be used to prevent any further soiling of the wound. No effort should be made to "set the bones," and in no case should a projecting end or fragment of bone be allowed to recede under the skin, unless means are at hand of making adjustment and proper fixation of the bones and limb, and unless the projecting bone and the edges of the external wound have been carefully cleansed and disinfected beforehand. Death has often resulted from the infection

* Read by invitation before the New York State Medical Society.

occasioned by unnecessary manipulation of a wound without previous sterilization of the hands. Never should a finger be thrust into any wound unless the finger and the wound have been previously cleansed and sterilized.

Careful fixation "in the position assumed by the injured limb" should be employed, unless it is clear that the ends of the fragments are where they will surely do more damage unless their position is changed. The patient should then be transported where he may receive proper permanent dressing and such treatment as his case will require.

The surgeon should try to determine at the very beginning of his responsible management of every case of compound fracture, the following points:

I. What will be the best treatment of this particular injury, considering: (1) the individuality and the physical condition of the patient; (2) the environment of the patient; (3) the actual condition of the injured member.

II. What method of treatment or operation will most likely result in the shortest time of disability of the patient and give him afterward the best functional result?

PERMANENT TREATMENT: I. SPECIAL CONSIDERATIONS

1. *Individuality of the Patient.*—Before everything else I would place the consideration of the patient himself. That is to say, I would learn, if possible, not only the actual physical condition of the patient with regard to the tolerance of the trauma, its effects and the extent and degree of the local injury, but also his habits, his temperamental peculiarities and his general health and resistance. Obviously, it would be highly improper to treat an exhausted patient, or a very old person, or a very young child, or a diseased and weak individual, as one would treat a vigorous adult in prime condition.

Thus, after assuring himself that hemorrhage has been thoroughly controlled and that the patient's suffering has been relieved as far as practicable, the surgeon should at once make a thorough physical examination of the patient. He should carefully note all organic lesions, indications of dyscrasias, improper or delayed development, or signs of marked senility. The blood-pressure should always be taken. The immediate subsequent procedures should be determined by this physical examination.

If the patient is in a condition of exhaustion from psychic shock, loss of blood, or "anoci-association," or if his blood-pressure is very low, all extensive and tedious manipulations and operations must be delayed. If he is very old, a long operation with continued anesthesia will be dangerous. Also any method of treatment which will require long confinement to bed should be avoided. Bone repair in most dyscrasic individuals is very slow and always uncertain. Methods must be varied and adapted to meet the indications of the patient's condition.

2. *Environment of the Patient.*—The surroundings of the patient will have a very important bearing on the treatment to be employed. When at all practicable, a serious compound-fracture case should be treated in a first-class hospital. It is as a rule far better for the patient to endure the hardship of a one- or two-hour journey in order to reach a hospital than to be subjected to the discomforts and deprivations he would have if he were treated at his home, unless he were very rich. A surgeon is sadly handicapped in trying to treat such cases outside of a well-equipped hospital.

3. *The Actual Condition of the Injured Member.*—As was said in the beginning, a compound fracture is always a complicated injury of very grave severity, and is practically always an infected wound. One must always bear this last fact in mind and treat the case with a full recognition of the importance of thorough cleansing and disinfection of the wound, and especially of thorough drainage.

General anesthesia is usually necessary for the proper examination, handling and dressing of a compound fracture of one of the principal long bones. This is particularly desirable, not so much for the relaxing effect, as to obviate the dreadful pain of the examination and fixation. Compound fractures when not comminuted are much easier to reduce and fix in place than simple fractures.

There is one point in regard to cleansing and disinfecting the injured parts I wish to note, that is, the great value of tincture of iodin for its rapid and very efficient action in disinfecting soiled skin and wounds. One must remember that iodin is of little use over skin which is moist and sodden. In such conditions it will not penetrate but will blister. The surface of the skin to which iodin is applied for disinfecting purposes should be dry. Therefore cleanse the skin of the limb about the wound with benzin, ether or turpentine, and alcohol, then dry carefully and paint it with the tincture of iodin.

Every compound-fracture case will require some operative procedure. In rare instances measures for proper drainage only will be necessary; but in most instances much more will be required.

One must decide at the time of the first permanent dressing:

1. Can the limb be saved?

2. If saved, will the limb be left in a condition for practical use?

3. Will it be best for this patient to run the possible risk of his life, endure a period of long disability, have probably a permanently disabled limb, or will it be best to amputate and thus practically assure his life and shorten the time of his disability by at least one quarter?

1. *Conditions Determining Amputation rather than Attempts at Conservation.*—*A.* If the skin has been so crushed or lacerated that it is evident that at least three-quarters of the periphery over the fracture will slough, and the muscles beneath are badly lacerated or comminuted, amputation will be inevitable.

B. If there has been a circular or annular destructive pressure on the whole periphery of the limb, at the site of fracture or very near it, amputation will be necessary.

C. If in a case of compound fracture with a serious annular laceration of the skin the subjacent muscles are badly comminuted, it will be best to amputate.

D. If the injury has been produced by tremendous pressure, as of a car-wheel or heavy pillars of iron or steel, the limb may have the skin of its whole periphery, or nearly all of it killed but not divided, but the muscles beneath will be torn across and the bone comminuted. Such injuries require amputation.

E. If the main blood-vessels are torn across in the irregularly jagged way common in these injuries, amputation will be necessary. I do not think anastomoses or transplants of blood-vessels will succeed

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in this class of injuries. The laceration of one of the chief vessels when there are two in an extremity does not necessitate amputation. The large nerve trunks will stand much more injury than blood-vessels and may successfully be sutured, unless a long segment of the nerve be destroyed.

F. If the bone or bones are comminuted so that the fragments are loose and deprived of periosteum, requiring the loss of as much as 6 cm. (3 inches) of the shaft, this, together with the lacerations of muscles and skin always present in such cases, will require amputation.

2. *Probable Final Condition of the Limb.*—This is a very important matter and might profitably be considered with the third condition, namely, the best thing for the individual patient. Undoubtedly limbs might be saved which would be quite useless and sometimes positively in the way afterward. Again, for some persons even a useless limb might be considered best if it could be left in a painless condition. A man who has to earn his living by activity and manual labor should be placed in a different category from a man whose livelihood depends on sedentary work requiring very little or no activity. Also for some persons the long confinement and disability resulting from the treatment of a serious compound fracture might be so irksome and indeed disastrous that they might prefer an amputation, and this would be best.

With regard to the danger to life there is no question that conservation is much more hazardous. Analysis shows that in 8.8 per cent. of the cases of compound fractures treated conservatively, the patients died. The average mortality after single major amputation is but 4.54 per cent. The average disability from compound fractures of the femur and both bones of the leg is thirteen months. That of amputation is not quite five months. Of course, this means that the patient may get about, and through the use of an artificial limb may return to a life of comparative activity and much usefulness, though rarely will he be able to return to his former occupation, if it were a laborious one.

Having decided to attempt conservative treatment of the extremity, the first consideration should be to cleanse the wound and surrounding skin. Disinfection (sterilization) of skin and wound should be done thoroughly, especially the ends of the fragments if one or more has penetrated through the skin. Some extension apparatus, such as the Lemon or Lambotte extension bar, is very useful in these cases. Reduction is usually not difficult, on account of the facts that one may see or directly feel the ends of the fragments and guide them by forceps or some kind of lever, and that the muscles are usually so badly lacerated that they do not offer the resistance which is nearly always present in cases of simple fractures.

The fingers should be kept out of the wound as much as possible. I think there can be no doubt that infection is most apt to occur from finger manipulation in the wounds. By a little practice and experience one will learn to perform all the necessary manipulations with the aid of instruments.

Frequently the wound made by the injury, by a little extension or direction, may be used as a way of approach to the bone. The muscles usually are so much lacerated that an incision of the skin and fascia only is necessary. In short, the injury has frequently prepared a way to the bone and if any further incision is necessary it may be so made as to assist in another cardinal object, namely, drainage. One objection to the open method of treating fractures of the long bones of the extremities, that is, the necessary wound, has in compound fractures been removed by the traumatic opening of the tissues.

Direct fixation of the fragments is nearly always best. A rigid splint or plate applied directly to the bone is better than wiring the fragments. In selected cases a nail or nails may be used. I cannot understand the objections and warnings of some otherwise very up-to-date and experienced surgeons against the use of plates in compound fracture cases. My experience and conviction have always been that these are the very cases which demand plates. No valid objection can be offered to sterile fixation instruments unless they in some way harm the fragments. If a proper plate is used in the proper manner it does not injure the bone.

Even if the wound cannot be thoroughly sterilized (and it is exceedingly difficult to do this), suppuration and the evils of infection are diminished locally by a proper metallic plate. Researches at Johns Hopkins Hospital over twenty years ago proved the inhibiting influence of many metals on bacterial growth. Iron and steel are not thus active, as they oxidize too readily, but silver, copper and nickel and their alloys are active inhibitors.

Since 1886 I have used a plate made of Wessel silver, and I have used Wessel silver pegs for many years to fasten this plate to the fragments. I am sure this plate has always seemed to exercise a beneficent effect in compound fractures even with active suppuration present. Besides, fixation relieves pain and further injury which might be caused by the excursions of the ends of the unfixed fragments. After fixing the ends of the fragments one must decide about suturing the lacerated soft tissues. As was said before, blood-vessels are injured in such a way in compound fractures that not only are long stretches absolutely destroyed, but the vasa vasorum are thrombosed for some distance on either side of the evidently destroyed area. The vessel-walls will not bear tension or constriction. I think, therefore, that vascular anastomoses and implantations cannot be used. This is all the more true because these cases are always infected more or less, and vascular anastomoses do not succeed except in sterile fields. Arteries and large veins, therefore, should be ligated and not sutured. Divided nerve-trunks may be successfully sutured in these cases and this should be done when necessary. Tendons and muscles may also be sutured, but not when they would seriously impede or block proper drainage. The lacerated fascia and skin should be pared along the margin of the original wound and then be closed with interrupted sutures, sufficiently close to prevent gaping of the wound, but not so as to interfere with free drainage.

Drainage is all important. There will have been very considerable hemorrhage. In very painful lacerated wounds the muscular coats of the local arteries are usually in a condition of almost tetanic spasm. Relief of the pain and complete rest of the limb will be followed by relaxation of the arteries; the result will be that small vessels not perceived during the operation will bleed after the wound is closed. Considerable oozing will always occur. In addition to the oozing blood the opened lymph-spaces will pour out

quantities of serum. All this fluid should be released and drained out of the wound. Unless this is done, disaster will almost surely occur. The reasons for this are so well known it is not necessary to go further into this.

A very important point with regard to drainage is that it should always be done in such a way and the drains so placed as to avoid all tension and harmful pressure in the wound. This is particularly important when the skin has been torn from the fascia and turned back as a flap, or raised up by a large effusion of blood. Most of the blood-supply has been cut off from the skin in such cases, and any pressure or much tension on the skin will cause a slough. Multiple incisions should be made through the skin and drainage by canalization (without the use of any drain material) should be employed. The incision should be so placed as to assist in relieving tension.

Thus, the bone having been fixed, the lacerated soft tissues sutured, the wound closed and proper drainage provided, a masse dressing of dry, sterile, absorbent material should be applied with fairly firm pressure, and over all a gypsum splint with strips of flexible wood or light metallic strips worked into it, should be molded, and so placed as to give support and some elasticity to the dressing. If all goes well the dressing may remain on for three weeks, then be changed and a similar one applied. Usually all drainage-tubes and gauze packs may be removed and left out at this first dressing. Also it is my custom at this dressing to remove the pegs which hold the plate, unless it be a fracture of the femur. If the wound has not closed over it the plate may also be removed. If the plate is well enclosed and buried by union of the flaps no effort should be made to remove it. As was said before, the plate does not cause any irritation if allowed to remain; on the contrary it seems to inhibit bacterial growth and hastens union of the wound.

PERMANENT TREATMENT: II. AS TO RESULTS

What method of treatment or operation will most likely result in the shortest disability of the patient and give him the best functional result? This determination is meant to apply only when conservative treatment is to be attempted. The indications for amputation have already been given. The question resolves itself therefore, practically, as it is intended to apply it in this instance, into: Will it be best to use direct fixation to the fragments, if so, what kind?

I have recently analyzed fifty-one cases of compound fractures treated in my clinic in St. Luke's Hospital.. These cases are taken from the records of the last five years and represent the cases which could be traced and the final results definitely determined. They represent the following classes of compound fractures.

Femur	8 cases
Tibia and fibula	15 cases
Tibia alone	10 cases
Patella	2 cases
Metatarsal bones	2 cases
Humerus	4 cases
Radius and ulna	7 cases
Radius alone	1 case
Ulna alone	1 case
Humerus, radius and ulna	1 case
Total	51

Direct fixation of the fragments was made in 35 cases, of which 28 were plated and 7 were wired. In 13 cases external fixation only was used; 3 patients were moribund when admitted and died within a few hours after admission. (No special treatment and not enumerated further.)

The cases in which plating was done were the following:

Femur	7 cases
Tibia and fibula	12 cases
Tibia	5 cases
Humerus	4 cases
Total	28

The cases in which wiring was done were the following:

Tibia and fibula	2 cases
Radius and ulna	3 cases
Humerus, radius and ulna	1 case
Patella	1 case
Total	7

The external fixation apparatus was practically the same in all the cases, namely, a reinforced gypsum splint carefully molded over a large masse dressing of sterile gauze and cotton wool. The average length in days of confinement in bed in the various injuries was:

Forearm cases	6 days
Humerus cases	11 days
Leg cases	28 days
Femur cases	38 days

The average time in days spent in the hospital in the various injuries was:

Forearm cases	23 days
Humerus cases	48 days
Leg cases	53 days
Femur cases	69 days

The average length of time the patient was away from work, that is, until he returned to his occupation, was six months in leg fractures and thirteen months in fractures of the femur. For fractures of the upper extremity the time of disability has not yet been thoroughly worked out, but it appears to be about four months. All except three of the patients who had direct fixation were operated on within forty-eight hours. Two cases of compound fracture of both bones of the leg were plated on the fifteenth and eighteenth day after injury respectively, because the fragments could not be kept in place. The case of compound fracture of the humerus and both bones of the forearm was wired on the tenth day after injury, also because by other means the fragments could not be kept in apposition.

Though compound fractures should always be regarded as infected wounds, it is noteworthy that it is recorded of these cases that suppuration occurred in only two of those which were fixed by direct application to the bones. One patient with compound fracture of the femur, plated, had a streptococcic infection, but made a good recovery; one patient with compound fracture of the humerus, radius and ulna, wired, had suppuration from a mixed infection, but also made a good recovery. Not one of the patients in the direct fixation cases died.

RESULTS

In the forty-eight cases treated, there were two deaths, both from septicemia. In one case of compound comminuted fracture of the femur with very extensive injuries to the soft tissues, amputation

should have been done, but the patient refused amputation and died on the fourth day from acute sepsis. The other case was one of prolonged septicemia from a mixed infection in a man who had a compound fracture of both bones of the leg, for which no direct fixation was done. The mortality was 4.16 per cent.

One patient with compound comminuted fracture of the bones of the leg with dislocation of the ankle-joint had a mixed infection; destruction of the joint and tarsus followed and an amputation became necessary. All but one of the forty-six patients who left the hospital had useful limbs, that is, the one previously noted on whom amputation was done. Of these patients, 40.32 per cent. have returned to their former work and report that they notice no disability.

Roentgenograms which were taken show the conditions of the bones during and after recovery. Roentgenograms in cases of compound fractures are taken (1) after the first permanent dressing; (2) after the fixation plates have been removed; (3) when the union seems complete; (4) after the patient has returned to his occupation.

The number of cases is too small for any set conclusion with regard to the treatment of compound fractures, but certainly in this small series direct fixation has produced much quicker recoveries and far better results than the former conservative methods. It will be noted that not one of the thirty-five patients in whom direct fixation was applied to the fragments died. They all made good recoveries. In the smaller number of cases (thirteen) in which the fragments were not fixed by direct splints on the bones (three hopeless cases are not considered in this reckoning), two patients died of sepsis.

Roentgenograms show that fragments which have been plated together remain in better adjustment than those which have been wired, and the anatomic results are better, except in cases of fracture of the patella. There is less pain after the use of plates than when wire is used, and union results more quickly. It seems, therefore, that compound fractures of the long bones are best treated by rigid splints applied directly to the bones. I believe that the Lane plates are not the best for these cases, however. Experience of other surgeons has shown that in cases of compound fractures the Lane plate must nearly always be removed. Usually it is difficult to get at the screws and then it becomes necessary to use a general anesthetic and to make a considerable additional wound in order to remove this plate; whereas a plate fastened by pegs which project through the skin may be released simply by withdrawing the pegs, and if it is necessary to remove the plate this may be done simply by utilizing one or two of the punctures remaining after the peg has been removed, which requires no anesthesia.

A further consideration is the time of disability. My cases show that the average time of disability for compound fractures below the knee was six months and for those above the knee, namely, fractures of the femur, thirteen months. The use of plates thus shortens the time of disability in leg cases by about four months and of the thigh cases, five months. Of the patients, 40.32 per cent. are known to have been able to resume their former occupations. No doubt a number of others were likewise able to do this, but I could find only this number after a year or more from the time their treatment was ended.

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THE ROUTINE TREATMENT OF PUERPERAL SEPSIS

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It is obvious that not every case of fever in the puerperium is of septic origin. Engorgement of the breasts, constipation, nervous perturbation, malaria, syphilis, typhoid and other adynamic fevers are some of the many causes of fever entirely separate and distinct from sepsis due to bacterial invasion. It must also be remembered that there are two distinct varieties of sepsis: sapremia due to saprophytic infection and putrefaction of pieces of placenta, membranes, decidua or blood-clot in the uterine cavity, and septicemia due to actual bacterial invasion, most often streptococcic, of the endometrium and adjacent structures, frequently invading directly the blood-current and by far the most dangerous variety.

Sapremia answers promptly to a single evacuation of the uterus and disinfection of the genital canal, with possibly a few supplementary daily intra-uterine douches. Septicemia means a long, hard fight, not infrequently a losing one, against many complications.

It is not my purpose to discuss the various means by which bacteria can be introduced into the genital canal of a parturient patient, except in one particular. One of the causes spoken of is auto-infection, in which the germs are already present, and no one, except the patient herself, is responsible. This is a comforting thought, but merely means that she is suffering from one infection (gonorrheal, for instance) which reduces her resisting power to a supplementary infection by any pathogenic micro-organisms which may be in the lochia, and is really not auto-infection at all.

DIAGNOSIS

The diagnosis of sapremia is easy. There is a moderate fever, considerable subinvolution of the uterus and a foul brown or brownish-red discharge. A single evacuation and disinfection of the uterine cavity is usually sufficient.

The diagnosis of septicemia is not so easy, in its early stages. The general symptoms are chills, rapidly rising temperature, rising pulse-rate and a physical depression often out of all proportion to the other symptoms.

The local symptoms, on which the diagnosis usually rests, are a foul discharge (though this symptom may be entirely absent), reddened and edematous labia, a false membrane formation and a subinvoluted, boggy, tender uterus. Pelvic exudate is not often an early symptom, though common enough in the later stages. In doubtful cases, certain methods of precision may be employed as aids in diagnosis. Leukocyte-counts will usually be higher than in any other form of fever in the puerperium, but in some of the worst cases a low count, showing poor resistance, will be obtained. Cultures taken from the uterine cavity, by the Doederlein tube, or cultures directly from the blood-current, are often valuable aids, but unless they are taken with the strictest aseptic technic, and submitted to a competent bacteriologist with adequate facilities for their culture and diagnosis, they become the reverse of precise.

PREVENTION

The preventive treatment of sepsis may be summed up in two words: surgical cleanliness. The nearer an obstetric case is handled like a major surgical one, the less will be the danger of infection.

The patient's room should be sunny and well ventilated. The patient herself should take a bath at the onset of labor and empty the lower bowel by an enema, and the pubic hair should be shaved or at least clipped close. The bed should be made fresh and adequately protected by pads (preferably of nursery cloth, which can be boiled and dried). The water should be boiled for half an hour at least, and trust should not be placed in antiseptic solutions. Instruments should be boiled, or if injured by boiling, soaked for at least an hour in 1:1,000 mercuric chlorid or 1:20 phenol (carbolic acid) solution, being previously wrapped in gauze or a towel. Bougies, for instance, unless wrapped, will float on the surface.

The sterilization of sheets, gauze, towels and cotton is often a matter of some difficulty. If access to a hospital sterilizer can be had, steam under pressure in an autoclave is the most efficient. A Rochester portable steam sterilizer is quite satisfactory, however, but the time-honored custom of baking in the kitchen stove is a delusion and a snare. Unless the materials are so charred as practically to disintegrate, they are not sterile, and when so charred they are of course useless. The gauze and cotton commercially prepared in glass jars have always proved satisfactory. That in cardboard cartons is open to suspicion. For sheets and towels a safe method of procedure is to have them freshly washed and then ironed with an iron not quite hot enough to scorch them.

The physician should scrub his hands just as carefully as if about to operate, and in addition should wear a sterile suit, or at least a gown, and boiled rubber gloves. It has been proved many times that parturient patients are more subject to infection by the exanthems than at other times, so the care of these patients and obstetric ones do not go together.

The nurse is governed by the same general rules as the physician, being scrupulously clean in the handling of the patient and her pads, etc. The so-called practical nurse on whom we must so often depend is a problem. Her intentions are of the best, but her execution is bad. If one can be found who does not have an ineradicable desire to test the temperature of water by wiggling her fingers in it; who does not keep the patient's pads in an open pasteboard box under the bed, or who is without a habit of impressing into service as a pad every piece of cloth she can find, before it is thrown away as useless, that one is the exception and as such a jewel beyond price.

TREATMENT

The first step in the curative treatment of septicemia is the local disinfection of the genital canal, commonly but erroneously spoken of as curettage — an operation more abused than any single one in obstetrics. It is indicated in nearly every case, and properly done, is productive of much good — improperly done, it may be homicidal.

The patient is placed on a table (an ordinary kitchen-table answers the purpose very well) and not in her bed, as remaining in bed adds greatly to the difficulty. An anesthetic is not necessary. The vulva and vagina are carefully cleansed with cotton and tincture of green soap and sterile water, followed by a douche of 1:4,000 mercuric chlorid solution.

The anterior lip of the cervix is caught by a double tenaculum and pulled down. This straightens the axis of the uterus, makes access to its cavity easier and lessens the danger of perforation of the posterior wall. The uterine cavity is then irrigated through a two-way catheter, and an Emmett curettement forceps is inserted and any masses of tissue contained in the cavity or hanging like stalactities from its walls are removed. The instrument usually sold under the name of placental forceps makes a first-class club, but as a surgical instrument it has its limitations. It is much too long, heavy and clumsy. If any curetting at all is done, a dull, broad-bladed curet should be used, and not a sharp one, and under no circumstances should any force be used. The so-called placental augers are outrageous instruments and should never be used. In the vast majority of cases complete evacuation can be secured by the placental forceps alone, and any curetting is unnecessary. The proper type of placental forceps is much more effective than the finger, and should be used in preference. When the operator is satisfied that the cavity is empty, a second intra-uterine douche is given, and the uterine cavity is not packed unless there is bleeding sufficient to warrant it.

Should the temperature not subside, or having subsided rise again, there is no need or justification for a second evacuation or, to use the abused term, curettage of the uterine cavity. Intra-uterine douching alone is advisable, and the best solution for this douche is one of tincture of iodin 2 drams, 95 per cent. alcohol 8 ounces, and sterile water sufficient to make two quarts. This douche given once daily is sufficient. Nothing is gained by douching more frequently. It is needless to add that the two-way catheter should have ample provision for return flow, to prevent any fluid passing out through the fallopian tubes.

To the form of treatment just described there is only one contra-indication — phlebitis; but as it is impossible to know in the early stages that the pelvic veins are infected and to be sure that the uterine cavity is empty, the lesser of two risks is taken by proceeding with the disinfection. Should, however, a sharp rise of temperature follow the disinfection, no further local treatment, even an intra-uterine douche, should be countenanced.

The routine use of vaginal or uterine douches, in the absence of symptoms justifying their use, and purely as a preventive of infection, is not to be recommended. The douches destroy Doederlein's bacilli, normally resident in the vagina, and by thus preventing the action of the acid vaginal secretion, remove one of the dependable barriers to infection.

In the general treatment the diet is of great importance. An easily digested, largely liquid diet should be given in quantities as great as the patient can assimilate. Alcohol should be given to the point of tolerance, from 8 to 10 ounces of whisky a day being not an unusual dose.

Stimulants are often required, as indicated by the heart-action. A patient with a pulse of under 110 does not ordinarily require stimulation. If it passes this limit, digitalin and strychnin are the most reliable drugs to be used. Artificial leukocytosis, theoretically beneficial, can be produced in one of several ways, as by hypodermic injection of 2 drams of 2 per cent.

watery nuclein solution twice daily, or the formation of a fixation abscess.

The latter recommendation is based on the fact that if a general infection becomes localized, improvement frequently results. Two drams of turpentine injected under the skin of the abdominal wall will produce an abscess which is all that can be desired. What success this treatment has had is probably due to an increase of leukocytes, but my results with it have not made me enthusiastic as to its advantages over less painful methods.

Hypodermoclysis or enteroclysis, on the principle of increasing the body-fluids and washing the blood, are worth a trial but not too much to be depended on. Enteroclysis seems to give as good results as hypodermoclysis, and is much more convenient. Two quarts of salt or sugar (1 dram to the pint) solution are given at a time.

The use of serums and bacterins is at present the subject of as much discussion as any single point in the treatment of sepsis. When the serum was first marketed it was hailed as a specific cure; too much was expected of it and naturally the results were disappointing. This much we have found as to its availability: When it is given early and in sufficient doses, beneficial and sometimes brilliant results can be expected. When it is given late, the results are disappointing. The minimum dose is 80 c.c., given hypodermically every six hours; 100 c.c. is better, but the small doses of 10 or 20 c.c. are waste of time and material. The serum must be fresh, and it will not stand transportation for great distances. It is an expensive form of treatment, because of the large doses required. In desperate cases it can be given intravenously, and by this method I have secured immediate improvement in a case when the hypodermic method of administration for forty-eight hours had produced no effect whatever. I have not seen anaphylaxis from these large doses, or any other untoward effects. Occasionally patients seem benefited by the injection, in addition to the antistreptococcic serum, of from 5 to 7 ounces of normal human blood-serum, secured from a healthy donor, once daily. This is worth trying when the results from the antistreptococcic serum have not been satisfactory. Much of the criticism against the use of serum has been based on insufficient dosage and late administration, either or both. When it is given in doses of from 320 to 400 c.c. in twenty-four hours, it is a valuable aid in the treatment of sepsis, though it cannot be hailed as a cure for sepsis *per se*.

The use of bacterins has not been so satisfactory even as the serum. They are chiefly indicated in localized infections, and are nearly if not quite useless in the general blood-current infection. The best results have been obtained in gonorrheal arthritis complicating the puerperium. Here again large doses, from 250 to 500 million or more, must be used, and either autogenous or polyvalent cultures may be employed.

Colloidal silver has been largely used abroad, but is of doubtful utility. It can be used as an inunction of from 5 to 10 per cent. argyrol ointment, or the intravenous injection of from 3 to 5 c.c. of a 2 per cent. collargol solution, repeated at twenty-four-hour intervals for three or four doses. The inunctions, though they may not prove beneficial, are at least harmless; the same cannot be said for the intravenous injections, as alarming collapse has followed their use. There is still a great deal of doubt as to the favorable action of either plan.

There is no purpose in this paper of discussing the surgical treatment or the complications of puerperal sepsis, with one exception (phlegmasia alba dolens), as this falls more in the line of specialism and hospital treatment. Every physician should, however, be familiar with the indications requiring abdominal section, in a case of sepsis. Briefly stated, continued septic symptoms, plus the development of an abdominal mass, palpable above the symphysis or Poupart's ligament, demand surgical interference. Infiltration of the bases of the broad ligaments does not require abdominal section, as 90 per cent. of these cases undergo spontaneous resolution, and the rest can be opened, if needed, through Douglas' pouch. The explanation of this abdominal mass is found to be almost always a cornual abscess, pointing toward the peritoneum. I wish to emphasize the advisability of operation for these cases. I am aware that in many places surgical intervention is deprecated, as these cases are said to be hopeless. Without operation they are indeed doomed, as the abscess will rupture into the peritoneal cavity. With operation and proper drainage (which is the main factor in success), 90 per cent. of them can be saved. In the last ten years, at the Maternity of the University of Pennsylvania, the mortality in 165 of these operations was fifteen, or 9.6 per cent., and this in a class of cases that without operation are hopeless. Rapidity of operation, removal of only what is diseased, putting in only enough ligatures to stop the bleeding, leaving the broad ligaments gape, drainage by a glass tube in Douglas' pouch out through the lower end of the abdominal incision, with the pelvis packed full of gauze and the end of the gauze emerging alongside the glass tube, and active stimulation are the factors influencing success. The glass tube is sucked out every twenty-four hours and removed in five days; the gauze is slowly removed over the next five days, and the sinus then drained by a rubber tube. Vaginal drainage is useless in these cases and will reverse the mortality figures. The whole subject of the surgical treatment of puerperal sepsis is a most complicated one and it is not my purpose to touch on it further in this paper.

The commonest complication which the general practitioner meets is phlegmasia alba dolens, or milk-leg, and because of its relative frequency deserves some discussion. It begins late, from ten to thirty days post partum, with pain in the calf, usually the left, and some swelling. A moderate fever lasts for a short time, and the swelling extends until the whole lower leg and not infrequently the thigh are greatly increased in size. The vein can often be felt as a tender cord down the inner surface of the thigh.

Treatment consists in elevation, applications of equal parts of lead-water and alcohol, painting ichthyol over the course of the vein, or application of a saturated solution of magnesium sulphate, and the patient must be kept as quiet as possible, in bed, until the temperature has been uninterruptedly normal for at least ten days. The greatest danger is pulmonary embolism, and prognosis must therefore be guarded. The danger of embolism is greatly increased by too early activity or by massage, which should never be used. Often considerable stimulation is required, as the disease is depressing and asthenic in tendency.

A much rarer form is cellulitis of the thigh, which tends to suppuration of the connective tissue, and is treated like cellulitis in any other part of the body.

Abscesses in the phlebitic variety are not unknown, occurring most often in the popliteal space, but it is the tendency to embolism that must make our prognosis guarded, and make us forbid the patient to leave her bed until the fever and local tenderness have entirely subsided, and limit her activities, when up, until the swelling has practically disappeared.

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THE PSYCHANALYST AND THE COMMUNITY *

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In the midst of the current discussion of psychanalysis, many aspects of the psychanalytic trend have been brought into view. The aspect, however, which to me seems by far the most vital but which has as yet received the least consideration is the relation of psychanalysis, and therefore of the psychanalyst, to the community.

There still persists, not alone in the lay, but also, unfortunately, in the medical mind, a wide-spread misapprehension in regard to the larger social and ethical implications of psychanalysis. It cannot be said that this misapprehension is due altogether to the mistaken interpretation of the dissenters; to a large extent it is due to the tendency of certain of the accepted adherents of the Freudian school of psychology. But wherever the blame should be placed for this misconception of the position of psychanalysis in relation to the ethical values of the community, it seems to me that it should now be the privilege, if not the obligation, of the psychanalyst to make clear the significance of his position to the body social, and to state in no disputable terms on what grounds he bases it.

The sphere of the psychanalyst is restricted for the most part to the study and relief of disorders embraced under the unhappy designation of functional nervous diseases or psychic disorders. It is, of course, justly acknowledged that the psychic equation of a patient enters more or less within the reckoning of every physician. Certainly it pertains conspicuously to the province of the specialist in nervous diseases — the neurologist, the medical psychologist. What is of momentous significance, however, in a comparison between the positions of these general trends of psychotherapy and the specific trend of Freud, is the wide difference in their fundamental method of procedure as determined by the essential disparity of the basic conceptions underlying these differing schools.

Of the numerous measures which human ingenuity has devised for successfully coping with nervous disorders, the aim hitherto of all of them has been essentially a remedial aim, that is to say the removal of discomfort. Relief, alleviation, cure is the exclusive idea. The underlying purpose of the conventional therapeutic regimen is conciliation, concession, propitiation. Thus, of the general schools of psychotherapy, the central idea is ease, palliation, support. The condition being one of discomfort, it must be replaced by one of comfort; and as the primary remedial object is easement, this must be sought with a view to the minimum incommodity to the patient. Hence conspicuous features of the more popular psychotherapeutic equipment are a quiet and remote domicile, conditions of isolation, rest in bed, attendant nurses, soporifics, and incidentally an occasional visit from the physician whose chief resources consist of a persuasive optimism combined with a gentle sympathy and a tactful evasion of aught that might in the least savor of unpleasantness to the patient.

I do not wish to disparage such a method. It possesses an undoubted therapeutic value. But whatever its remedial virtue, the fact is not to be blinked that, in the main, the method is designed with a view to the delectation of the patient. It is largely a program of concession. It is parleying and indirect. It temporizes and conforms, is diplomatic, cautious. It is a program that is encumbered with considerations of etiquette, rather than a direct and untrammeled scientific approach to the understanding and adjustment of the disorders at which it aims. The physician makes no real demand on the patient, but on the contrary directs all his ingenuity toward making him comfortable; thus the aid which a patient receives through such a mode of treatment is to a large extent rendered him on his own terms.

The position of the psychanalyst demands a directly contrary course of procedure. Here the situation admits of no compromise, no evasion, no attitude of indulgence. The policy of the psychanalyst is a robust one, and he outlines it without mitigation or cavil. Simply and directly, however considerately, he explains to the patient the psychologic meaning of his disorder in accordance with the psychanalytic interpretation, and informs him of the bearing of faulty mental habits and adaptations on the causation of nervous processes. The physician explains the essential disharmony at the root of these disorders; the irreconcilability of contending mental and emotional influences within the personality, pointing out the inherent conflict thus embodied in neurotic disorders. He further explains that a true adjustment may be made only through an honest recognition of the vital unconscious trends with which his personality is now blindly and inadequately contending. At the same time he frankly tells the patient that the process through which the requisite adjustment is to be made entails difficulty, discomfort and personal sacrifice on his part, and he does not disguise from the patient *his* responsibility in this effort of readjustment.

While not unsympathetic to the suffering of his patient, the psychanalyst makes clear that his is no maudlin or sentimental sympathy, such as would surround the patient with the soft and ineffective ministrations of external attentions, but that his sympathy is virile and adult and allied to what there is within the man of courage and honest purpose. And so the psychanalyst makes clear his position that for him "cure" means a thorough and unflinching acquaintance with one's innermost self, that cure is the attainment of an undistorted vision of life without regard to personal comfort or edification, and that the mind which is torn with inner doubt and discord is prepared to accept terms of peace with itself only when it has been brought to see things in their unembellished truth.

* Read before the fifth annual meeting of the American Psychopathological Association, Albany, N. Y., May 6, 1914.

Such is the position of the psychanalyst, and from this position he does not stir.

Realizing then that the symptoms of the neurotic patient are but the social gossamers beneath which he seeks to hide his natural outline, the psychanalyst proceeds to strip away these artificial draperies and address himself to the naked inner man. This is not an easy task. It is not easy by reason of its very nature. As the symptoms of the neurosis have been devised by an ingenious unconscious as a measure of defense against the bugbear of reality, the patient will seek no less ingeniously to maintain this defense against all encroachments.

So, from the outset, it is understood that patient and physician are entering earnestly and resolutely on an endeavor involving mutual responsibility and sacrifice.

When the psychanalyst has at last divested the personality of its artificial mantle, and views the natural man; when we have stripped away the husks of pretense and have dared to look unafraid on the contour of the actual; what we find universally to be the purpose, the real motive of all this elaborate and painstaking mechanism of insincerity and disguise is an ancient and indigenous *egotism*. Egotism is the effort to see things as we would have them, rather than as they are. Egotism is therefore no respecter of truth. The *wish* is its sole criterion, for egotism is allied with the unconscious, with the primary, pleasure-principle, the original phase of psychic life with its immediate, hallucinated satisfactions.[2] It is egotism which leads us to choose what is pleasant in preference to what is true. It has been wisely said, "the truth hurts." It is so much easier to be beguiled with flattery and blandishments than to subject oneself to the searching light of self-criticism.

Thus it is egotism that lures men into the rosy path of irresponsibility. To follow it, however, is to take the path that leads finally beyond the bounds of organized society toward disintegration and madness, for *insanity is nothing else than the unmeasured sway within the personality of this disorganizing principle of egotism*. A recent writer, in a penetrating essay on Cervantes' classic portrayal of the mad Don Quixote, acutely discerns this underlying motive of the hero's insane delusions. "It is", the author says, "Don Quixote's irrational determination to believe as he wants to believe, rather than as the facts warrant," that is the cause of all his madness. "As Don Quixote more and more indulges his delusions and further departs from strict intellectual and moral integrity and truth, more and more he is alienated from his kind, more and more he is a lonely figure, less and less can any one help him. There is no longer any exchange of opinions between himself and others, only his own exaggerated opinions asserted dogmatically. He resents every dispute, every assertion which differs from his own, so that by and by his companions withdraw their converse."

It is this same egotism — this obstinate "determination to see the world *as it is not*, but only as he wishes it to be" which is the besetting fallacy of the neurotic personality. We maintain, however, that while not less deep-seated and obdurate, the egotism of the neurotic individual is somehow incompatible with something better within him. He seems imbued with a finer intellectual insight, a deeper sensitiveness to life's values. Some innate truth endows him with a higher moral criticism, so that instinctively he opposes a barrier to egotism's sensuous appeal, and so the insincerity and untruth into which his native egotism has decoyed him is to such a personality wholly intolerable, and he experiences the intensest mental suffering in consequence of the moral conflict which an enforced resort to such artificial protections has occasioned him. He can no longer find satisfaction in the popular appeasements of the body-social, but becomes more and more deeply introverted, withdrawn and inhibited, until at last his life has become so crippled and confined as to be no longer livable.

This description offers a rough character-interpretation of a frequent type of neurotic personality.[3]

It is the aim of the psychanalyst to lead such a personality out of his prison of repression and ineffectiveness by means of a patient and honest study of himself. With consideration and respect the psychanalyst traces one by one the causes which have led to his isolation and repression. He leads the patient to a gradual realization of the inherent egotism—the latent unconscious *wish*—that has lain back of his symbolic disguises. Thus the personality is led little by little to an ever-deepening renunciation of the immediate pleasure-satisfactions and to the gradual attainment of a correspondingly broad conscious adaptation.

Let it not be thought, however, that we can inculpate on the charge of egotism the neurotic alone. After all we are of one tissue. We have but to look about us at the so-called normal persons composing the community to see that life masquerades no less under the disguise of social make-believes than under the symbolic subterfuges of the neurotic individual. The difference is that the artifices of the social community, being collective, unite its members, so to speak, by a common language, while the neurotic isolates himself through the extravagance of his metaphors. For the usages which commonly pass current are unacceptable to him. He refuses to accept life on the terms of popular indorsement. Rejecting the criteria of the majority, he stands on a life-and-death principle, and from his self-immolating choice popular subscription cannot swerve him.

What is the difference here? What is it that thus differentiates the neurotic, in his gloominess and withdrawal, from the average good fellow with his cheery complacency? The difference is merely that the neurotic assumes a deeper disguise. His concealment is more subtle. The symbols to which he resorts possess an organic antiquity. They are esoteric, elemental. It is thus that he separates himself from his normal social congeners.

Observe, however, that the policy which leads to the neurotic's self-imposed ostracism differs only in degree from the policy of the community. For society is hysterical, too. Society too has its elaborate system of defense-mechanisms, its equivocations and metonymies, its infantile make-shifts and illusions. The difference is that society's counterfeits possess the advantage of universal currency, and so the record of its frailties is set down under the name of custom rather than of pathology. The psychanalyst well knows

2. Freud, S.: Formulierungen über die zwei Prinzipien des psychischen Geschehens, Jahrb. f. psychoanalyt. u. psychopathol. Forschungen, 1911, iii, 1. Burrow, Trigant: Conscious and Unconscious Mentation from the Psycho-Analytic Viewpoint, Psychol. Bull., 1912, ix, No. 4, 154.

3. Burrow, Trigant: Character and the Neuroses, Psychoanalytic Review, 1914, i, 121.

though that inherently the situation is the same here as with the neurotic individual. For in whatsoever way it is sought to soften the stern aspect of reality, whether through the artificial appeasements and irrationalities of the social polity, with its phantastic mythological beliefs and superstitions, or through the yet subtler assuagements of the neurotic personality with his vicarious conversions and distortions, back of it all and actuating it all is, as I have said, an inveterate and inherent egotism.

I have said that egotism is the more comforting course. If we would judge how much more comforting is the course of egotism, we need only reflect on the part it plays in the complex of activities which we call life. Consider for a moment to what extent the criteria by which we live are colored by egotism. Consider the part that egotism plays in our restless social, commercial and political activities. Consider to what extent the aspiration which we call religion is imbued with the egoistic hope of ultimate rewards and satisfactions.

And more tragic still, consider how often the activities we call scientific — that is, the supposedly sincere inquiry into truth — are actuated by an egotistic spirit of pride and self-assertion. Think how even here this organic and inveterate pleasure-principle asserts itself in human affairs to the detriment or undoing of honest purpose!

When we regard the deeper, more biologic aspects of human life — the interests and demands which arise from the sphere of the sex instincts and emotions — we find that here egotism is at its source, for it is one with the primary pleasure-affects in which the impulse of sex has its genesis.

Egotism is precisely the enemy of human progress against which the psychanalyst levels his aim. Under whatsoever sham egotism thinks itself most safely concealed, it is here that the psychanalyst directs his attack.

The task of the psychanalyst, therefore, is the readjustment of the neurotic patient through a process of self-elimination. It is his task to replace caprice with logic, emotion with reason, temporary satisfaction with permanent truth. The psychanalyst then takes his stand on adult characterologic ground. He recognizes that the abnegation of immediate selfhood is the highest attainment within the ethical nature of man, that the subversion of the primary, infantile pleasure-mode is the supreme renunciation.

We contend that since a great part of the beliefs and customs of the community have at heart the same underlying motive as actuates the symptoms of the neurotic patient with his organic evasions and substitutions, namely, an inherent egotism, the trend of the psychanalyst not only aids, in its reeducative influence, the individual, but also makes for a better and a healthier community. For the psychanalyst would utilize this force resident in the onward effort of mental evolution. He would direct to better uses this impulse of self-attainment which lies at the source of the manifestations which we call life, for with the attainment of consciousness the possibility is opened for converting this genetic life-force into a constructive and a purposive principle. With the gradual enlarging of consciousness it has become more and more adapted to social and ethical ends. Thus through the sublimating process of mental growth, egotism becomes diverted into self-devotion.

Life is wrought of aspiration; conduct is begotten of desire. Back of the restless energies of men there is this elemental instinct of attainment which constitutes the driving force of humanity itself—"humanity old, untruthful, deluded, wandering among a thousand cheats, clinging to outworn customs and beliefs, pretending to nobilities not its own, lending itself here, there, everywhere among a thousand falsehoods; humanity with its ineffectual virtues, its imperfect vision;" and yet for all its frailty and folly, for all its silly self-delusion and pitiful egotism, the deeper the psychanalyst applies himself to the study of human motives and to the interpretation of human life, the more clearly he discerns within this same humanity the deeper forces, making for order and continuity, which lie at the heart of life's processes.

The psychanalyst, therefore, who rightly appraises his work cannot but be deeply sensible of the honesty and the dignity of his endeavor, and of its wide social usefulness, for his efforts are allied with the forward progress of the race.

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ANEURYSM OF THE SINUS OF VALSALVA

WITH REPORT OF TWO CASES

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Although a search through the literature does not seem to substantiate the fact that aneurysm in this situation is common, it undoubtedly impresses one that the lesion is sufficiently frequent for the clinician to keep in mind.

FREQUENCY

The frequency of this aneurysm is difficult to compute accurately. Among the "special features" pointed out by Osler[1] are the statements: "It is often latent, causing sudden death by rupture into the pericardium. It is a medicolegal aneurysm met with in coroners' cases." Possibly because of this a large percentage of cases do not get into the records.

Cattell and Steele,[2] in reporting a case of aneurysm of the sinus of Valsalva, state that it is a very rare pathologic lesion, their case being the first in 2,000 necropsies. In 3,108 necropsies Bosdorff reports two. In the Middlesex Hospital Reports, containing protocols of 3,030 cases, there were two of aneurysm in this situation. Thus in 8,138 post-mortems only seven were found.

In 1840 Thurman collected twenty-two aneurysms affecting the aortic sinuses. In 1874 Durand reported twenty-two. Cattell and Steele, from whose monograph many of these data were obtained, collected twenty-one reports of cases up to 1898. I have found in the literature but seventeen cases between 1840 and 1903. It is impossible, too, to be sure whether or not some of them were not included by the authors mentioned above.

Sibbs collected 632 reports of cases of aneurysm of the arch, eighty-seven of which involved the sinuses of Valsalva. This was quite the largest percentage of occurrences found and is not generally borne out by other observers. In 120 cases of aneurysm of the

1. Osler: System of Medicine, Ed. 8, p. 851.
2. Cattell and Steele: Tr. Philadelphia Path. Soc., 1898.

arch reviewed by Cattell and Steele, only seven were found in this situation.

Recent literature on the subject is very meager. There is a record of but three cases between 1905 and 1912.

These data would tend to confirm the view of the infrequency of this lesion, but it is entirely possible that the record, although the best we have, is not a true index of its real occurrence.

The sinus most often affected seems to be the right anterior; this is explained by Gray by the fact that the regurgitation of the blood takes place chiefly against the anterior aspects of the vessel.

Sinusal aneurysm may terminate in one of several ways. It may rupture into the pericardium. It may rupture into one or more of the cavities of the heart, the vena cava or the pulmonary artery. Of the twenty reports of cases collected by me, in two the aneurysm perforated the right auricle, in one the left ventricle and pulmonary artry, in one the pericardium and in five the pulmonary artery.

It has been stated that rupture does not lead to immediately fatal results, but death occurs most often from fatty degeneration of the hypertrophied myocardium. The aneurysm not rarely causes a relative dilatation of the aortic ring and leads to death from cardiac failure.

ETIOLOGY

The lesion occurs according to most authorities in young adults; as Osler puts it, "most frequently among young syphilitics." Of my cases, in only eleven were ages stated; four were in the third decade, four in the fourth, one in the fifth and two in the sixth. The lesion predominates in the male. In only one case in the literature could I find a woman affected. This is rather striking in view of the fact that the two cases, a report of which follows, were in young women.

Krzywicki states that the causes of aneurysm of the Valsalvian sinus are atheroma, increased pressure affecting points of least resistance, and syphilis. Roubier and Bouget concur, but they are "certain that syphilitic aortitis presides in these ectasias." "Peacock thought that certain of these aneurysms were due to congenital malformations which observations by Devic and Savy seem to confirm."

The majority of observers, however, recognize syphilis as the most potent etiologic factor.

REPORT OF CASES

Before considering the symptoms and signs of this lesion, I would first report the two cases coming under my observation, as they illustrate fairly well the usual manifestation of this condition.

Both of these cases occurred at the Roper Hospital under the service of Dr. Robert Wilson, Jr. Both patients were young negresses, aged 17 and 26, respectively, and both showed evidences of syphilis. The cause of death in both instances was venous stasis. In the first case there was dilatation of the aortic ring; in the second, perforation into the pulmonary artery. These cases, added to those previously collected, make twenty-two in all, six of which perforated the pulmonary artery.

CASE 1.—L. W., colored girl, aged 17, was admitted to hospital, Oct. 24, 1913, complaining of cough which began in the previous summer and persisted to the present; shortness of breath, weakness, pain under left nipple and edema of feet and legs. Latter symptoms began two weeks before and grew progressively worse up to the time of entrance. Past history negative. Physical examination revealed scars over tibiae, swelling of feet and legs, hurried and difficult respiration, rapid irregular pulse, wavy pulsations over precordium, especially at base. Thrill at base was most distinct over second and third intercostal spaces on the left of the sternum. It was impossible to decide whether this thrill occurred during systole or diastole, but it probably occurred during both. Apex was displaced downward and to the left. Cardiac dulness was increased to right and left of sternum. A loud humming "saw-like" murmur was heard over precordium, but with greatest intensity in third left interspace about 2 inches from sternum. In this location the bruit was extremely loud, of a high pitched rasping quality, and distinctly to-and-fro in character. At this site could also be heard a rather sharp snap, resembling a very accentuated closure sound. Because of the irregular heart-action and the peculiar murmur, it was impossible to determine during what part of the cardiac cycle it occurred. Roentgenoscopy revealed a great hypertrophy of both chambers, especially of the right ventricle.

The patient died November 19, with gradual rupture of compensation.

Necropsy.—General anasarca. Ascites, 750 c.c. Right pleural effusion, 500 c.c. Hydropericardium, 200 c.c. Chronic mitral valvulitis with dilatation of orifice and insufficiency. Dilatation of tricuspid orifice. Chronic aortic valvulitis with contraction of leaflets, dilatation of orifice and insufficiency. Sclerosis and atheroma of aorta with dilatation of atheromatous patch in right sinus of Valsalva, producing a saccular aneurysm of the sinus large enough to admit the end of the thumb and causing further dilatation of the aortic ring. General cardiac hypertrophy with chronic interstitial myocarditis, sclerosis of coronaries, parenchymatous and fatty degeneration of myocardium with general dilatation. Chronic passive congestion in other parenchymatous organs.

CASE 2.—B. L., colored woman, aged 26, was admitted to hospital, Feb. 27, 1914. Hysterectomy had been performed one year ago. Since then patient has been well except for occasional headache and feeling of dizziness, until Jan. 1, 1914, when symptoms of present trouble appeared. These consisted of cough, feeling of fulness in chest, dyspnea and edema of ascending type. The physical findings in this case were very similar to those in the preceding one. There was a greater degree of respiratory distress, more marked edema and the pulse was regular, but the most important difference was the absence of the loud closure sound which was so well marked in Case 1.

Roentgenoscopy revealed a large heart with pronounced distention of the right side.

Necropsy.—General anasarca. Papular eruption on forehead. Scars of old ulcer on right leg. Operative cicatrix in midline of abdomen. Excess of pericardial fluid. Mitral valves thickened but sufficient; atheroma and sclerosis of aorta with dilatation of atheromatous patch in right sinus of Valsalva producing aneurysm which projects through septum into pulmonary artery, perforating by two small openings behind the corresponding pulmonary valve. The sac admits the index-finger. General dilatation and hypertrophy of heart with fatty and parenchymatous degeneration of the myocardium.

DISCUSSION

It is not always possible to explain physical signs from the point of view of pathology, but we should try to do so, that our observations may be of value in future experiences. In the first case the striking signs were the loud to-and-fro "saw-like" murmur and thrill, the cardiac hypertrophy, especially of the right ventricle, the precordial pulsations and the so-called "closure" sound. There were probably several conditions responsible for the murmur, for, besides the aneurysm, there was an aortic insufficiency and a valvulitis of the mitral orifice causing insufficiency there. The cause of the cardiac hypertrophy is therefore

obvious. The closure sound was probably diastolic and due to congestion in the lesser circulation.

The murmur in Case 2, in which there was perforation, can be accounted for by the to-and-fro passage of blood during the two phases of the cardiac cycle from aorta to pulmonary artery. It is easily conceivable that the churning of the blood caused thereby would produce the thrill. The hypertrophy of the right ventricle was caused by the increased quantity of blood in the pulmonary circulation due to the leak from the aorta.

The majority of other symptoms exhibited by these patients were simply those of failing compensation. It should be recalled that death in both cases was due to the effects of the aneurysm, namely, myocardial degeneration, and not to rupture.

DIAGNOSIS

In neither case cited was the diagnosis made ante mortem. In the first the youth of the patient, the peculiar murmur, the pulsations and thrill, with the valve-sound heard loudest over the pulmonary area and the right ventricular hypertrophy shown by the Roentgen ray were strongly suggestive of patulous duct of Botalli. In fact, we did not feel that this condition could be thrown out in spite of its rarity. We felt reasonably certain that mitral stenosis was present even if there was no persistent ductus to account for part of the signs. This proved incorrect.

In the perforating case we felt that here too there was a strong possibility of mitral stenosis playing a part in the findings. This was suggested by the hypertrophied right ventricle. Aneurysm of the heart wall was considered by one of the observers because of the precordial pulsations, the thrill and murmur.

It will readily be seen that the diagnosis of aneurysm of the sinus of Valsalva, perforating or otherwise, presents almost insurmountable difficulties. In fact, I have found no case on record in which it was stated that the correct conclusion was reached ante mortem. W. F. Wade in 1861 reported a case of aneurysm of the aorta arising above the valves and perforating the pulmonary artery and right ventricle in which the diagnosis was made before death. This is the nearest approach to the condition rightly interpreted.

There are no signs particularly peculiar to the lesion. The aneurysm may remain latent until rupture. In a case reported by Ralfe the signs were increased precordial dulness, double bruit at base and a faint systolic murmur at the apex. In a case by Stokes in which the sac ruptured into the conus arteriosus of the pulmonary artery, there was a thrill over the sternum and a double murmur heard best over the left base, but heard all over the chest even by the patient himself. In F. P. Henry's case, in which the aneurysm also opened into the pulmonary artery, the signs were dulness in left infraclavicular region, pulsation and thrill in the second left interspace, and a rasping systolic murmur over the same area. These findings and the findings in the two cases observed by me, although varying in many respects, are fairly constant in one particular: nearly all signs are referable to the pulmonary area or, rather, they are more marked in that situation.

In none of the cases contained in the literature was the Roentgen ray used as an aid to the diagnosis of this condition. This is important, as by means of roentgenoscopy any ectasias of the arch which might give identical signs could be discerned.

In conclusion it might be stated that aneurysm of the sinus of Valsalva, although comparatively uncommon, is not so rare as to be altogether devoid of clinical interest, and, although the diagnosis is infrequently justified, the lesion cannot be excluded in the face of the finding, in a young syphilitic, of a saw-like bruit and thrill most marked in the pulmonary area and a negative roentgenogram.

THE TREATMENT OF GALL-BLADDER INFECTIONS

WITH A REPORT OF TWENTY-SIX RECENT CASES *

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Although asked to discuss the "treatment of gall-stones," I have preferred to substitute the word "infections" for "gall-stones," as we now know that the primary cause of these stones is a microbic infection reaching the gall-bladder either through the blood or directly through the bile-passages from the intestine.

It is not my intention to deal minutely with the various operations which may be required in gall-bladder diseases, but rather to consider the indications for operative interference in these diseases and to present some of the pathologic complications which may arise when these indications are not heeded. I shall also say something about the mortality following operative treatment and its causes.

As a basis for my remarks I have taken the gall-bladder cases in which I have operated during the past six months and shall give a brief synopsis of each case. They number twenty-six, fourteen patients having been operated on at the Jefferson Hospital and twelve at the Pennsylvania Hospital. My figures might be more convincing if they were larger, but they represent a season's work and sufficiently illustrate every point I would like to make.

In considering the indications for operation, I would say that if one feels warranted in making a diagnosis of gall-stones or gall-bladder infection, he should also feel warranted in advising operation, unless there be some definite contra-indication. I am sure we all agree that if stones are present, no medicinal agent can dissolve them or make them pass through the ducts into the intestine. If the passage of stones does occur, it is Nature and not medicine that brings it about, and the passage of a few or many stones does not mean that all have passed or will pass. Case 12 illustrates this point well. While we are waiting and watching for our medicines to do the impossible, or while we are helping our patients to bear the repeated attacks of colic, the stones are increasing in number and in size, and the patient is running the risk of developing one of the serious complications to which gall-stones give rise and which are amply illustrated in the accompanying cases. When the stones are in the gall-bladder only and the drainage of that organ is not disturbed, an operation is a simple matter; but when

* Because of lack of space, this article is here abbreviated by omission of the case-reports. These, however, will appear in the author's reprints, a copy of which will be sent by the author on receipt of a stamped, addressed envelope.

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the stones have passed into the common duct, when they are ulcerating through into the duodenum or colon, when they have blocked the cystic duct and given rise to an empyema, when the smaller bile-passages of the liver have become infected and jaundice is present, when the patient has developed an acute or even a chronic pancreatitis, or when the stones have by their constant irritation caused a cancer of the gall-bladder, the operation becomes at once more serious and sometimes hopeless. If we could cure only a few cases of gall-stones by medicinal means, there might be some excuse for postponing what is in most cases inevitable. Such postponement is not fair to the patient, and it is more honest to state the case fairly to him and let him decide what line of treatment he will have. He would be a fool who chose operation if told that by medical treatment he could be cured but cure by such means is not possible, and any sensible man or woman convinced of his medical adviser's honesty and ability will follow the advice of the latter. When the crisis or complication comes, the patients who may have suffered for years from sufficient symptoms to warrant surgical intervention, are often keener for operation than the surgeon is. What we need is to understand that to await serious symptoms — for instance, chills, fever and jaundice — is comparable to awaiting glandular metastasis and malignant cachecia before making a diagnosis of cancer. The time to look for and extinguish a fire is when we see the smoke and not when the house is wrapped in flames; then a child can make the diagnosis.

I have had in mind while making the foregoing remarks the cases in which the medical attendant has but little or no doubt in his diagnosis. In these cases it would seem that his duty was clear, but any surgeon's experience goes to show that the large majority of the patients are not operated on until some marked pathologic complication has developed. In most of the cases here reported some such complication was present, and the average duration of symptoms was over six years. The patients operated on during the most favorable period are usually those who come into the hospital wards — patients who can't afford to be invalids or to pay for medicinal treatment.

But what of the cases that do not show unmistakable signs of gall-bladder disease? Many can be diagnosed by obtaining a careful history and making an examination of the abdomen, especially at a time when the patient is having his greatest discomfort. The most constant, the earliest and the most persistent symptom of gall-bladder infection is what the patient calls "indigestion," which is manifested by a sense of "fulness" or "distention" in the upper abdomen, coming on especially at night and without any definite relation to the taking of food. He is apt to eructate quantities of gas and, if his discomfort increases to actual pain, he may vomit. The prompt relief which vomiting gives in these cases is of great diagnostic value. When the patient complains of gastric symptoms which are not characteristic of ulcer of the stomach or duodenum, the gall-bladder is often the cause of the trouble. An infected gall-bladder is nearly always tender and if tenderness is present, in connection with the type of indigestion referred to, then in the absence of symptoms suggestive of some other lesion, one is justified in holding the gall-bladder under suspicion and watching the patient carefully. If the gastric symptoms are persistent and if the tenderness is marked a diagnosis of gall-stones is warranted and operation indicated. If, in addition, the patient has sharp attacks of upper abdominal pain, referred or not to the back or right shoulder-blade, and accompanied and relieved by vomiting, one can feel more certain of the diagnosis. A transient jaundice following such an attack completes the picture. But jaundice is not essential for a correct diagnosis, it having been estimated that about 80 per cent. of the gall-stone patients operated on have never had jaundice. In the twenty-six cases here reported it had occurred or was present in fifteen. It seems unnecessary to repeat that if the patient has typical attacks of severe gall-stone colic, operation should be done, and the same applies to cases presenting evidences of serious infection of the gall-bladder or ducts. These are the cases of which I spoke in the beginning in which there is no doubt whatever as to the seat of the trouble.

Can we rely on the less typical symptoms given above? I believe if one is careful to eliminate other conditions, such as gastric or duodenal ulcer, chronic appendicitis, etc., the gall-bladder will be found to be the seat of the trouble. Is it not a fact that when one operates on these suggestive symptoms he often finds nothing? This has been my experience in some cases. I have studied very carefully my mistakes in diagnosis and with more care before operation and more experience, they are becoming much less frequent. The twenty-six cases reported here are all in which I have operated since Sept. 1, 1913, and I have felt that in none has the operation failed to develop the cause of the symptoms in the gall-passages.[1] I have previously discussed my errors in diagnosis. In one of the malignant cases here reported (Case 14) I made the mistake of first exploring the kidney, and in another (Case 19) the symptoms pointed to the kidney and the correct diagnosis was based on the Roentgen-ray findings alone. This was a case of calcareous gall-bladder with stones.

One point which I made in the former paper and should like to repeat here is that the gall-bladder can easily be the cause of very definite symptoms and still not contain stones, and that physicians often make the mistake of telling the patient he has gall-stones and are then unable to produce them. Although there may be diseased conditions in the gall-bladder and ducts amply sufficient to account for the symptoms, he is never quite satisfied because the expected stones were not found. He must be told that gall-bladder symptoms may result from other causes which demand operation just as much as the presence of stones. In this series there were two cases of acute cholecystitis without stone and three of chronic cholecystitis without stone. In my opinion these patients would have later developed stones had they recovered without operation.

This brief series of cases shows a variety of pathologic conditions which give some idea of what may be found in gall-bladder surgery. I regret that it does not contain a case of acute pancreatitis, which is so commonly caused by infection from the bile passages, and a case of rupture of the gall-bladder from over-distention, but I feel that what these cases do show is sufficient to teach the lesson that it is undesirable to

1. In a paper read before the Massachusetts Medical Society, June 11, 1913; Boston Med. and Surg. Jour., Dec. 4, 1913.

allow patients with gall-bladder symptoms to drag along until some complication renders an operation imperative and often dangerous.

There are 3 cases of acute gangrenous cholecystitis, in all of which the patients recovered; 2 cases of acute cholecystitis without stone, one developing two weeks after typhoid fever; 8 cases of stones in the common duct; 1 of stone in the ampulla of Vater requiring duodenotomy; 1 of calcification of the gall-bladder; 1 of abscess formation in the liver and spleen; 1 of subdiaphragmatic abscess two weeks after operation in a case of acute cholangitis due to stones in the common duct; 1 of cirrhosis of the liver; one of stones ulcerating into the colon; 20 cases of stones in the gall-bladder alone or associated with some of the enumerated complications, and 2 cases of cancer of the gall-bladder. The greatest number of stones (771) was found in one of the malignant cases.

In addition to the findings at operation the following points in the history of these cases may be of interest: In 5 cases there was a definite history of typhoid fever; in 12 it was definitely stated that there had been no typhoid fever, and in 9 cases no mention of typhoid is made in the history. Jaundice was present or there was a history of jaundice in 15 cases; no jaundice or history of it in 11 cases. The duration of the gall-bladder symptoms varied from one week to thirty-three years in 21 cases, was not given in 1 and given as "many years" in 4 cases. In the 21 cases in which the duration is definitely stated, the average is over six years. The youngest patient was 19 years old and the oldest 69 years; there were four patients between 19 and 30 years of age; four between 30 and 40; nine between 40 and 50; three between 50 and 60, and six between 60 and 70 years. There were eleven men and fifteen women.

There were five deaths as follows:

In Case 7 I drained an abscess of the liver and overlooked a large abscess in the spleen, which was found at necropsy. The patient was extremely ill and a diagnosis of stone in the common duct with suppurative cholangitis had been made. After removing a number of stones from the gall-bladder and draining a small abscess in adjacent portion of the liver, I thought I had found all the trouble. The patient died a few hours later.

In Case 8 there were about thirty stones in the gall-bladder and cancer of the gall-bladder with extensive involvement of the liver and glands was present. The patient died about a month after the operation.

In Case 18, a woman, aged 69, had declined operation when she was in good condition and did not consent until she had a severe attack of pain followed by jaundice, fever and a high leukocytosis. She was a dangerous risk, but I thought she would die if not operated on. I might have saved her by waiting for these acute symptoms of sepsis to subside, but my judgment was in favor of operation. She had stones in the gall-bladder and common duct and a quantity of sand and debris in the hepatic duct. She had had her first typical attack of gall-stone colic twenty-five years before and for two years had had frequent attacks.

Case 22 is similar in many ways to the preceding. The patient was 65 years old. I saw her when she was jaundiced and advised operation when she had improved. Before the jaundice had entirely disappeared she began to have chills and fever and I was obliged to operate when she was very septic. She had stones in the gall-bladder and common duct. She died from complete suppression of urine on the second day after operation without any abdominal symptoms and with a free drainage of bile. She had been having attacks of gall-stone colic for many years.

In Case 24, a man aged 45 was operated on when jaundiced but when acute pain and fever had subsided. He died seventeen days after the removal of stones from the common duct and gall-bladder, from an undiagnosed subdiaphragmatic abscess, which gave rise to no fever and no other evidences of its existance. At the necropsy the gall-bladder and ducts were in good condition.

It will be noticed that all of these deaths occurred in very ill patients; one with malignancy a month after operation; one with an abscess in the spleen; and three with acute cholangitis from stones in the common duct. With one exception, the malignant case, they were all jaundiced at the time of the operation.

In the uncomplicated case the risk of the operation is no greater than in any clean abdominal operation. In the cases of common-duct stone with cholangitis there is always the risk of death from sepsis, but the risk is greater without than with operation. Postoperative bleeding in the jaundiced cases can usually be prevented by the use of horse-serum; in all such cases the coagulation time should be taken and, if it is beyond the normal limit, it should be reduced by the injection of the serum. In this series of cases there was but one instance of bleeding, and this was not marked; it came on two weeks after operation when the patient was dying from a subdiaphragmatic abscess.

One is often asked what the chances are of gall-stones reforming after operation. My own conviction is that when all stones are removed and the gall-passages properly drained for about two weeks, recurrence is extremely rare. I can recall but two secondary operations in my own cases. In one case, I removed a stone from the common duct two years after my first operation, but here I felt it had been overlooked at the first operation, when I had removed 137 stones from the gall-bladder and 7 from the common duct. In the second case, that of a physician, there was a return of symptoms four years after the removal of 69 stones from the gall-bladder and I felt I might have left a stone which was causing the trouble. I was relieved to find 21 stones in the gall-bladder, for although I might have failed to obtain a stone in the ducts, I could hardly have overlooked 21 stones in the gall-bladder. This, I think, was clearly a case of redevelopment of stones. I removed the gall-bladder at the second operation.

I believe that this experience of six months in gall-bladder surgery represents pretty well what surgeons everywhere are finding and doing and that it teaches lessons by which we all may profit.

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A Suggestion for Applicator.—Because of the bulk of the applicator and the minuteness of the sinus, it is at times inconvenient to apply fluids with the ordinary cotton applicator. The so-called "sanitary pipe-cleaner"—everywhere obtainable, inexpensive and easily sterilized—is suggested to replace the cotton applicator. It is especially useful in fistulas and sinuses of the long bones.—CHARLES J. ROTHSCHILD, M.D., Fort Wayne, Ind.

GASTRIC HYPERTONY AND GASTRO-ENTEROSTOMY

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Every one is familiar with the brilliant results which usually follow a gastro-enterostomy for the relief of gastric ulcer. The patient makes a good recovery from the operation, the pain is relieved, vomiting ceases, weight is gained and the patient is clinically cured.

Occasionally, however, the operation is only a partial success or even an absolute failure. Vomiting recurs either while the patient is in the hospital or when the usual mode of life is resumed. Pain reappears and the patient may be as miserable as before. Indeed, the condition may be more serious, because of the stress of the operation, and the mental depression felt, as a result of what seems a failure of the most energetic measures to relieve the suffering.

This unusual course of events sometimes occurs when a correct diagnosis has been made, and the operation performed by a skilled and experienced surgeon. The following case-abstract will serve to illustrate:

A married woman, aged 28, who had one child in good health, was well until November, 1911, when she had a "cold." While recovering from this she drank some coffee one evening, this being the first food she had taken for two days. She became nauseated and vomited without pain, and without relief. This recurred after every meal for three weeks; then there was an interval of two weeks during which she ate what she pleased without nausea or pain, but she "did not feel herself." Following this, the vomiting recurred and continued constantly, that is, some food was vomited daily, until August, 1912, when she had an operation (gastro-enterostomy) performed. Vomiting again occurred while she was still in the hospital, and in September, 1912, she was worse than before the operation.

In August, 1913, a second operation was performed (adhesions broken up), which was followed by relief for about seven weeks. In October, 1913, vomiting again recurred almost daily. Roentgenoscopy revealed both the pylorus and the gastro-enterostoma functioning, but a bismuth residue after eight hours.

Obstruction was diagnosed, and at operation adhesions were found partly constricting the small intestine just below the gastro-enterostomy. These were severed and the patient did well until about two weeks after the operation; then on the day before leaving the hospital she began vomiting again.

Four other cases of this character might be reported, but this would be unnecessary repetition. That my experience is not unique is shown by the report of Zweig[1] of Vienna, who records twenty-seven such cases. That the unfavorable results are not necessarily due to faulty surgical technic has been repeatedly demonstrated by roentgenographic examination and actual inspection at a second operation. What, then, is the explanation?

The answer will be found in an understanding of the physiology of gastric motility and the disturbances of this function, which often precede and accompany gastric ulcer, that is, the *Vagotonie* of Eppinger and Hess,[2] hyperkynesis or spasticity of the stomach. While this reference opens the whole subject of visceral neurology, for present purposes it is sufficient to recall briefly the innervation of the stomach.

This organ receives nervous influences from three sources: it receives tonic or motor impulses through the vagus and inhibitory impulses through the sympathetic, and it may perform its functions fairly well when both splanchnics and both vagi are severed, being controlled under these circumstances by the local ganglionic plexuses of Auerbach and Meissner.[3]

In the condition described by Eppinger and Hess, there exists a state of affairs corresponding to excessive vagus stimulation, or a stimulative vagus neurosis, and while this manifests itself in other regions corresponding to the wide distribution of the nerve, our present concern is with the effects on the stomach. As one might suppose, both the motor and the secretory functions are increased. There is usually hyperacidity, pylorospasm and increased muscle tone with occasional spastic contraction. These patients say that they cannot take much food, the stomach feels full after even a meal, and there is a knot in the throat, cramp in the epigastrium, a feeling of tightness and constriction in the thorax, cardiac disturbance and the eructation of gas. Vomiting often occurs soon after eating, and is especially apt to be produced by excitement and anxiety.

Roentgenoscopy reveals a small stomach which fills with bismuth slowly, a mere thread trickling down toward the pyloric region, the stomach wall is tightly contracted around the contents, and the gas bubble in the fundus is small. Antiperistalsis and vomiting sometimes occur during examination.

The association of hyperacidity and pylorospasm with gastric ulcer is well known and needs no discussion here, but the effect of excessive tonicity and spastic contraction on the functioning of the stomach—after a gastro-enterostomy—is not so generally recognized. It is to this, therefore, that attention is especially invited.

Whatever may be the state of the stomach-muscle at other times, it is usually found relaxed at the time of operation; if it is not, relaxation is usually produced before the anastomosis is made. Now if the stoma is made of the usual size and in the correct location, it will functionate properly while the gastric motility is normal or even weakened; but if the neuromuscular mechanism is hypertonic and hypersensitive, this condition is not removed by an operation, and therefore as soon as the patient is in a position to receive the usual stimuli, that is, to take a full meal and resume the cares and annoyances which were present before the operation, spastic contraction of the stomach recurs. Not only is there pylorospasm as before, closing that outlet, but the contraction of all the muscle fibers in every direction greatly reduces the size of the surgical orifice and will at times close it entirely. Cramp, reverse peristalsis and vomiting recur, and clinically the patient is as ill as before the operation.

These symptoms often suggest obstruction, and a roentgenographic examination is made which may show both the pylorus and surgical orifice patent unless the examination is made when the stomach is contracted, that is, during an attack, when it will show

1. Zweig, Walter: Die Misserfolge der Gastroenterostomie bei Pylorusstenose infolge spastischen Verschlusses der Magenfistel, Arch. f. Verdauungskr., 1913, xix, 740.

2. Eppinger, H., and Hess, L.: Die Vagotonie, Samml. klin. Abhandl. über Path. in Therap. d. Stoff u. Ernährungsstörungen, Berlin, 1910, Nos. 9 and 10.

3. Carlson, A. J.: Contributions to the Physiology of the Stomach: vi, A Study of the Mechanism of the Hunger Contractions of the Empty Stomach by Experiments on Dogs, Am. Jour. Physiol., 1913-1914, xxxii, 369.

a hypertonic stomach with no trace of bismuth passing through the new opening. A secondary operation will show the surgical opening patent and reveal nothing except a few minor adhesions such as occur after any operation.

If this explanation is the correct one, what is the remedy?

All ulcer cases should be examined for signs of vagotony, and if these are present, such cases should be regarded as unsuitable for surgical treatment; or if operation is imperative, as it sometimes is, suitable medicinal and hygienic remedies should be combined with the usual postoperative management.

The recognition of vagotony is not difficult if one will remember that there is such a syndrome, and examine the patient for the signs pointed out by Eppinger and Hess. These are the gastric symptoms already given, to which must be added either a few or all of the following: bradycardia, disturbances in the respiratory rhythm, a tendency to bronchial asthma, dermography, urticaria, local sweating, demonstrable "Head zones," low blood-pressure, pigmentation of the skin, eosinophilia, spastic constipation alternating with nervous diarrhea, and other minor signs of disturbances in the autonomous nervous system.

In vagotonic patients with gastric ulcer, it is not sufficient to perform a gastro-enterostomy and discharge the patients with advice to be careful about the diet; for although the operation may render local conditions more favorable for the healing of an ulcer, by providing for a more prompt discharge of food and the neutralization of the acid gastric contents by the bile, the important conditions underlying the formation of ulcer have not been removed, and if neglected may again annoy the patient and thus embarrass the physician.

Reference is again made to the irritable vagus. A surgeon, von Bergmann,[4] in his researches, has demonstrated that disturbances of innervation involved in secretion, motor and sensory function of the stomach constantly accompany both duodenal and gastric ulcer, and also that in the majority of cases, abnormal functioning in other organs dependent on the vegetative nervous system is plainly evident.

The conclusion follows that a neurotic general constitution and neurotic phenomena in the stomach and duodenum seem to be responsible for primary erosions, and also tend to prevent healing, thus establishing a vicious circle. Therefore drugs and other therapeutic measures acting on the vegetative nervous system are indicated in the treatment of gastric and duodenal ulcer *after* as well as *before operation*.

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4. Bergmann, G. von: Ulcus duodeni und vegetatives Nervensystem, Berl. klin. Wchnschr., Dec. 22, 1913, p. 2374.

Infant Mortality in New York City.—According to a tabulation of W. H. Guifoy, registrar of records of the Department of Health, New York City, the death-rate per annum of children under five years has fallen from 96.5 per 1,000 in 1891, to 61.3 in 1901, 43.8 in 1911 and 37.3 in 1913. For the summer months—June, July and August—the death-rate of children under five years of age during the same period was 125.1 per 1,000 in 1891, 76.2 in 1901, 46.3 in 1911 and 38.8 in 1913. This reduction is believed to be due largely to the use of pasteurized milk, but doubtless also to other hygienic and sanitary measures adopted as the result of a constant agitation, legislation and the efforts of the health authorities.

THE NON-SPECIFIC ACTION OF A SERUM PREPARED ACCORDING TO THE METHOD OF BEEBE*

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The treatment of exophthalmic goiter with a specific thyrotoxic serum, so that just the required amount of thyroid could be destroyed *in situ*, is desirable. Ten years ago, one of us (Portis) produced such a serum by injecting dogs' thyroids into goats. The cytotoxic serum so produced, although strongly thyrotoxic, was unfortunately also cytotoxic for the various viscera, especially the liver and kidney, and was markedly hemolytic. Stimulated by the reports from both the laboratory and the clinic, in the use of nucleoproteins derived from tissue cells as antigens, and the assertions that such serums are specific, we undertook the following work in December, 1912:

Normal human thyroid glands were obtained shortly after death and nucleoproteins were prepared according to the method of Beebe. These were injected into Belgian hares and rams in doses recommended by Beebe. Considerable difficulty was experienced in immunizing our earlier animals, for most of them died after repeated injections, with a severely toxic picture simulating anaphylaxis. After repeated failure, we at last succeeded in immunizing a ram. The technic of the preparation of the nucleoprotein material used, and the manner of its injection, are given in detail.

At the beginning of the work the material for injection was prepared as follows:

The normal glands were obtained as fresh as possible from necropsy cases and kept in normal salt solution, with a small amount of chloroform, in the ice-box until they were further prepared. No glands were used which stood longer than over night in such condition. They were then ground to a fine pulp in a food-chopper and then macerated with chemically pure sand in a mortar, after which the glands were extracted with from three to four times their volume of normal salt solution made faintly alkaline with sodium hydroxid (from 3 to 4 drops of 10 per cent. sodium hydroxid to 1 liter of sodium chlorid solution). Before the salt solution was added, all blood was strained off through gauze, so that only the solid part was used. The mixture was then shaken vigorously for about an hour, after which it was transferred to the refrigerator for from twelve to eighteen hours, a small amount of chloroform being added to keep down any possible contaminating bacterial growth. At the end of from twelve to eighteen hours the material was filtered through gauze and then fine filter-paper. The filtrate was weakly acidified with acetic acid and heated at 44 C. (111.2 F.) for ten minutes or longer, according to the time necessary to bring down the precipitate. This precipitate was washed repeatedly with normal salt solution, until the washings no longer gave the biuret reaction. It was then dissolved by rendering the precipitate faintly alkaline with 10 per cent. sodium hydroxid and filtered through heavy filter-paper. In every preparation made, this procedure was repeated to insure a perfectly pure product. It is

* From the Pathological Laboratory of St. Luke's Hospital.
* Read before the Chicago Pathological Society, April 13, 1914.

needless to say that this was all done in as sterile a manner as possible. Cultures were made from the end-product, and if bacterial growth appeared, this was discarded. This is the method of Beebe.[1]

In each of the preparations the gross material was weighed and the solution measured, so that the equivalent of a certain amount of gross thyroid might be estimated by measuring out certain amounts for injection.

With this material the following animal inoculation experiments were carried out:

BELGIAN HARE 1.—Dec. 23, 1912: Injected intraperitoneally with the equivalent of 15 gm. human thyroid.

December 30: Injected with the equivalent of 20 gm. thyroid.

December 31: That morning the hare was found dead. The necropsy revealed no peritonitis or any gross pathologic changes. Cultures were sterile.

HARE 2.—Jan. 2, 1913: Injected intraperitoneally with the equivalent of 10 gm. thyroid.

January 8: Injected with equivalent of 15 gm. thyroid. The hare died some time during the night. The necropsy showed no gross pathologic changes, but the symptoms seemed to be rather anaphylactic in type. Cultures were sterile.

HARE 3.—Jan. 14, 1913: Injected intraperitoneally with the equivalent of 7 gm. thyroid.

January 19: Injected with the equivalent of 12 gm. thyroid. The hare died about four hours later from what appeared to be anaphylactic shock. There were no gross pathologic findings, and cultures were sterile.

RAM 1.—Dec. 23, 1912: Injected intraperitoneally with the equivalent of 85 gm. thyroid.

December 30: Injected with the equivalent of 100 gm. thyroid. On injection gas bubbles having a strong odor of hydrogen sulphid escaped through needle. The ram appeared well.

Jan. 7, 1913: Injected with the equivalent of 120 gm. thyroid. About five minutes after injection the ram had marked defecation and was very unsteady on its feet. In the afternoon it appeared to have recovered.

January 16: Injected with the equivalent of 90 gm. thyroid.

January 18: The ram died some time during the night. The heart's blood gave almost pure growth of staphylococcus. There was slight inflammation of the omentum at the point of injection. No peritonitis was seen. The left lung showed consolidation, and a purulent material could be squeezed out of the small bronchioles. The intestines were very much dilated. The thyroid gland was very small and of hard consistency. No other gross pathologic changes were found.

RAM 2.—Jan. 27, 1913: Ram injected intraperitoneally with the equivalent of 100 gm. thyroid.

February 1: Injected with the equivalent of 95 gm. thyroid.

February 8: Injected with the equivalent of 125 gm. thyroid.

February 13: Injected with the equivalent of 120 gm. thyroid. On the morning of Feb. 16, 1913, the ram was found dead. No necropsy was held, but during the course of the injections the animal showed almost typical signs and symptoms of hyperthyroidism.

Following these experiments a change was made in the immunization. The method of preparation was the same, but 1 gm. of thyroid to 100 c.c. of normal salt solution was used. This 1 per cent. solution was injected in smaller doses than in the previous experiments.

One hare and one ram were inoculated, the date and results being as follows:

BELGIAN HARE.—May 16, 1913: Injected intraperitoneally with 5 c.c. of this 1 per cent. solution.

May 22: Injected with 10 c.c. of 1 per cent. solution.

May 28: Died toxic death; cultures were sterile.

RAM.—May 17, 1913: Injected intraperitoneally with 10 c.c. of 1 per cent. solution.

May 22: Injected intraperitoneally with 20 c.c. of 1 per cent. solution.

June 2: Injected intraperitoneally with 40 c.c. of 1 per cent. solution.

June 9: Injected intraperitoneally with 45 c.c. of 1 per cent. solution.

June 20: Injected intraperitoneally with 75 c.c. of 1 per cent. solution.

July 14: Injected intraperitoneally with 65 c.c. of 1 per cent. solution.

July 3 the ram was bled and 600 c.c. of blood removed.

July 20 the ram was bled to death and about 4.5 liters of blood were obtained.

July 14 a healthy ram was bled to have normal blood for purposes of control.

The serum obtained from the immunized ram was studied for the presence of agglutinins. This is taken as an indication of the presence of specific antibodies and also determines their strength. We standardized ours according to the method of Beebe as follows:

Fresh human thyroid was ground very fine and extracted with normal salt solution. The mixture was then strained through gauze to remove the coarser particles and then centrifuged in a high-power machine. The upper layer of the sediment, together with a small amount of the supernatant liquid, was thoroughly shaken, a small amount of normal salt solution was added and the shaking repeated. This was placed in 1 c.c. amounts in small tubes. To each tube, 1 c.c. of various dilutions of the immune serum was added. For control, 1 c.c. of similarly diluted normal ram's serum was added to another set of tubes. The contact method was used and the serum floated on the emulsion. This method brings about the reaction more distinctly. In the dilutions of 1 : 2 and 1 : 10 the agglutination ring was observed within a few minutes, and in higher dilutions of 1 : 100 after standing for several hours.

The normal serum gave no reaction at all, and we were quite enthusiastic. Dr. Wells suggested that we make similar tests, using emulsions of other human viscera. In exactly the same manner described, emulsions were prepared from the kidney, liver and spleen and these all gave as marked and as prompt a reaction with the immune serum, as did the emulsion of the thyroid.

The method used by Beebe and followed by us does not, according to Wells, produce nucleoproteins, but rather salts of protein and nucleic acids. He says:

> It seems probable that in the living cell the nucleic acids must exist bound to protein molecules, but that these compounds are the same as those which are precipitated from either neutral or alkaline extracts of the cells or tissues, is highly doubtful, a fact universally recognized by physiological chemists. With an abundance of proteins of all sorts and conditions present in such extracts and in view of the easy dissociation of the compounds of nucleic acid and proteins, it is to be supposed that the nature and proportion of the protein which is thrown down with the nucleic acid will depend entirely on the conditions existing at the time. Variations in the concentration and character of the proteins, in the proportion of nucleic acid, of the concentration of salts and other solutes, of the degree of acidity and alkalinity of the solution, and perhaps even of the temperature, will all serve to cause variations in the composition of the precipitate which contains the nucleic acid.

1. Beebe: Am. Jour. Pharm., 1911, lxxxiii, 56.

Pearce and Jackson, after a number of carefully conducted experiments, in 1906, could not confirm the work of Beebe. They did not find any evidence that injections of nucleoproteins produced a specific cytotoxic serum.

Taylor, in 1911, published his experiences with a serum produced according to the earlier methods of Beebe. He used thyroid glands removed by operation from exophthalmic goiter patients, and injected their nucleoproteins into hares. The serum did not show beneficial action in any of the cases in which it was used.

CONCLUSIONS

Nucleoproteins, so-called, of human thyroid glands do not act as specific antigens.

The antibodies produced are probably due to the small amount of protein contained in the injected material.

The action of the serum, so produced, is not specific for the thyroid gland alone, but has a similar action on other organs, especially the liver, kidney and spleen.

We wish to express our thanks to the authorities of St. Luke's Hospital for the privilege of conducting these experiments at their laboratory, and to acknowledge our indebtedness to Drs. Hektoen, Le Count, Wells, Davis and Moody for frequent advice and courtesies.

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AN AID TO PROGNOSIS IN PULMONARY TUBERCULOSIS

A SIMPLE URINARY TEST: THE UROCHROMOGEN REACTION OF WEISZ

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We think that all physicians who have had any considerable experience in the treatment of patients with pulmonary tuberculosis will agree that in many cases it is difficult to make an accurate prognosis. Will this patient recover? Will that patient succumb? These are questions that cannot always be answered correctly. Because of these facts, any test or procedure which will in the slightest degree assist in making more accurate prognoses, especially if simple and easily applied, demands careful attention. We have, therefore, felt justified in outlining our experience with Weisz' urochromogen reaction in the urine of patients sick with pulmonary tuberculosis.

For several years we have considered the presence of a diazo-reaction in the urine (if more than transient) as an unfavorable prognostic sign,[1] but unfortunately the actual practical value of the diazo-reaction is limited, for its absence is not necessarily a favorable prognostic sign, many cases with a hopeless prognosis failing to show it. We have often thought how valuable might be some test or reaction having the same significance as the diazo but more uniformity in its appearance in the urine, if it could be found. It was with considerable satisfaction, then, that a little more than two years ago we noted the publication of a paper by Lieutenant Heflebower,[2] pathologist to the United States Army Tuberculosis Sanatorium, Fort Bayard, N. Mex., describing just such a reaction and his experience with it. We at once determined to add this test to our routine urinary examinations. While two years is too short a time to establish definitely the full value of any test in such a chronic disease as tuberculosis, still, as our experience with it tends to confirm the views held by both Weisz,[3] its originator, and Heflebower, who, so far as our knowledge is concerned, first called attention to it in this country, we have been tempted to report our results, mainly in the hope that others may be induced to use it, so that after several years enough independent reports may be available, covering a sufficiently long period of time, to establish its value fully.

Weisz, after nearly six years of experimental work, found that urochromogen is the principal substance which causes the diazo-reaction, urochromogen itself being a low oxidation product of urochrome, the normal yellow coloring-matter of the urine. He found that one reason for the lack of uniformity in the appearance of the diazo-reaction is that urochromogen has an antecedent which does not react with the diazo-reagent. He furthermore found that a potassium permanganate solution, added to urine, demonstrated the presence of both urochromogen and its antecedent. It will thus be readily seen that this reaction would be expected to be more constant and uniform in its appearance than the diazo, and Weisz and Heflebower have both found this to be so. According to Weisz, urochromogen, being a low oxidation product of urochrome, occurs in the urine only when there is a condition of faulty oxidation. This condition of metabolism is present only when catabolism is affected by some toxin circulating in the blood, and such a condition is present in pulmonary tuberculosis, so he says, only when the focus in the lung is so active or extensive as to surcharge the blood with toxins or battle down the defensive forces of the body, which would otherwise neutralize the effect of these toxins.

As to the value of the test in actual practice, Weisz' personal views, as quoted by Heflebower, are the following:

1. Patients who at the beginning of a course of treatment do not show a disappearance of urochromogen from their urine have a hopeless prognosis.

2. The transient appearance of urochromogen can be found in acute exacerbations of the disease, and is to be regarded as a symptom of progression of the tuberculous process.

3. A distinction between continuous and transient, constant or occasional appearance of urochromogen should be made only as to the prospective duration of the disease.

4. Patients with transient excretion of urochromogen may, if external conditions are favorable, continue to live for several years, while the constant appearance of the reaction, especially when it is plainly becoming more intense, shows a rapid progress of the disease in the lungs and a hopeless prognosis.

Heflebower concludes that:

1. The frequency and constancy of the appearance of diazo and urochromogen reactions in the urines in cases of pulmonary tuberculosis constitute an index to the severity of the condition, a constant negative

1. Provided always that certain drugs have not been administered for some time before the sample of urine is collected for examination.

2. Heflebower, Roy C.: Am. Jour. Med. Sc., February, 1912, p. 221.
3. Weisz, Moriz: München. med. Wchnschr., 1911, lviii, 1348.

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result pointing to a case that is progressing favorably, while a constant positive result indicates a progressively downward case.

2. The urochromogen test occurs more frequently and is more constant than the diazo-reaction. It is, therefore, a better index to the condition of the patient than the diazo-reaction.

3. The intensity of both the diazo and urochromogen reactions is of great import as an index to the severity of the condition, especially as a method of determining the difference in prognosis in cases which show the reactions constantly.

Heflebower also says that "cases showing urochromogen more constantly are for the most part those cases that are having the greatest temperature elevations and loss of weight." This would be expected, for the majority of patients who are not doing well and who do not recover are of that type, but many times this type of case does not show a urochromogen reaction, and it is just here that it is of most value; for by its absence it shows that that particular patient, in spite of seeming and being seriously sick, has a resistance to the disease which the one showing urochromogen has not, and for the time being at least, a more hopeful prognosis may be made. On the other hand, patients not having great temperature elevation, loss of weight, or much lung involvement — patients who, in other words, do not seem to be very sick, and in whom one would ordinarily be tempted to make a favorable prognosis — occasionally show a persistent urochromogen, and in our experience, the great majority of these do not improve. The latter are the cases Weisz means when he says:

> There are some cases whose condition of the lungs is not such that you would be persuaded to give a bad prognosis and who through the presence of urochromogen in the urine first reveal the serious nature of their illness. Parallel with the development of the disease, you find an apparent increase in the excretion of urochromogen.

While we do not make any final conclusions in connection with this report from a prognostic point of view, on account of the reasons stated above, we cannot, on the other hand, help but believe from a study of our observations that the urochromogen reaction does bear a fairly constant relation to the clinical condition of a patient.

Of 113 cases included in this report, 5 were classified as incipient, 28 as moderately advanced and 80 as far advanced. Of the cases of incipient tuberlosis, the urochromogen reaction was negative in 100 per cent., and all of these patients have either recovered or are progressing to recovery. Of the 28 moderately advanced cases, the urochromogen reaction was positive in 32 per cent., and negative in 68 per cent. Of the 32 per cent. positive reactions, comprising 9 cases, 2 patients, or 22 per cent., showed a continuous positive urochromogen reaction and showed no clinical improvement while under observation. In 7 cases, or 78 per cent., the urochromogen reaction was changed from a positive to a negative during treatment, and this change from positive to negative was coincident with a clinical improvement. Of the 68 per cent. negative reactions, comprising 19 cases, 18 cases, or 95 per cent., showed a continuous negative reaction, and of these, 17 patients showed pronounced clinical improvement, and in 1 the condition remained stationary. In 1 case, or 5 per cent., the urochromogen reaction was changed from a negative to a positive, and this change was without any clinical change for the worse in the patient.

Of the 80 far-advanced cases, the urochromogen reaction was positive in 55 per cent. and negative in 45 per cent.; of the 55 per cent. positive reactions, comprising 44 cases, 34 cases, or 77 per cent., showed a continuous positive reaction, and of these, 28 patients became clinically worse and 6 showed clinical improvement. In 10 cases, or 23 per cent., the urochromogen reaction was changed from positive to negative during treatment; 7 of these patients showed coincident clinical improvement, while 3 became worse. Of the 45 per cent. negative reactions, comprising 36 cases, 28 patients, or 78 per cent., showed a continuous negative reaction, and of these, 20 patients showed clinical improvement and 8 became worse. In 8 cases, or 22 per cent., the urochromogen reaction was changed from a negative to a positive, and in 7 of these, the patients became coincidentally worse, while 1 showed improvement.

Heflebower used a control-tube of urine in all of his tests; and because we found, as he says, that "it enables one to distinguish very slight changes of color," we have done the same, performing the test as follows:

Into each of two small test-tubes is put 1 c.c. of urine, and 2 c.c. of distilled water are added; now, to one tube which is to be tested for urochromogen, 3 drops of 1:1,000 solution of potassium permanganate are added, the tube is shaken thoroughly and compared with the control tube. The appearance of the faintest yellow color shows the presence of urochromogen and is easily detected by comparing with the control-tube, to which no potassium permanganate is added. The test is read positive, however, only when the solution stays clear.

Our experience with the urochromogen reaction covers over two years in 113 patients. Some individual patients were observed as long a time as two years, the presence or absence of urochromogen being determined every month, the average length of time the entire number of patients were under constant observation being about four months for each patient.

SUMMARY OF TESTS

Type of Case	Number of Cases	Urochromogen Reaction Positive Per Cent.	Negative Per Cent.
Incipient	5	0	100
Moderately advanced	28	32	68
Far advanced	80	55	45

In the light of our experience with the urochromogen reaction, in these patients, it appears to us that the following statements seem at the present time permissible:

1. The presence of a urochromogen reaction in the urine of a patient sick with pulmonary tuberculosis is for the time being of unfavorable prognostic import.

2. The persistent presence of a urochromogen reaction in the urine, in spite of proper treatment, probably means a hopeless prognosis.

3. Its absence is generally, though not invariably (regardless of how sick the patient seems), of good prognostic import.

4. Its prompt and continued disappearance soon after treatment is instituted, in a patient who showed it before treatment, so far as our experience goes, is a favorable prognostic sign; but it will take several

years' observation of these particular patients to determine this point conclusively.

5. Finally, it is not an invariable guide to prognosis, but in the majority of cases is of much value, and as all prognoses must be good, bad or doubtful, it will, if judicially used, help materially to reduce the number in the doubtful class.

JUVENILE PARESIS TREATED BY THE INTRASPINAL INJECTION OF SALVARSANIZED SERUM *

REPORT OF A CASE

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Professor Emeritus of Nervous and Mental Diseases, University of Minnesota Medical School
ST. PAUL

Thirty-seven years ago Dr. Clouston reported the first case of juvenile paresis under the name of developmental general paralysis. Until that time paresis was believed to be essentially a disease of the adult. I have found in medical literature to date records of 228 cases of this disease, and there are other references to which I have been unable to gain access. Clouston made it clear that the symptoms presented by his patient, a boy of 16, differed in no way clinically or pathologically from those of the generally recognized type. The investigations of Noguchi and his co-workers have clearly established the truth of this contention. The real significance of the term "juvenile" is that of *time incidence;* the fact that in one case we are dealing with a congenital and in another with an acquired syphilis is a matter of no moment. In either instance the symptoms are the direct results of the activities of the *Spirochaeta pallida* on the brain cortex. One fact is clearly apparent, that any young congenital syphilitic is potentially a juvenile paretic, and Abraham states that all children of syphilitic parents, giving a positive Wassermann, whether or not they show any evidence of congenital syphilis, should be treated as carefully as if they were adults with definite symptoms of the disease.

The clinical syndrome of the juvenile form varies with the time of onset. Delusions of a sexual nature and grandiose ideas of wealth, strength and ambition do not occur until after puberty. About one-half of the cases develop after adolescence, although the disease may occur in the very young, showing itself by mental retardation or feeble-mindedness.

According to Fennell, 5 per cent. of imbecile children are congenital general paretics. Optic atrophy is an early symptom. Juvenile paresis develops about equally in the two sexes, perhaps slightly more frequently in the female. The cases usually fall under the demented type, but one of Mott's patients and five of Kleinberger's showed grandiose ideas.

The clinical symptoms are so variable and uncertain, however, that often it is only by the serobiologic findings that one can arrive at a diagnosis.

The report of the following case is of interest not because of the rarity of the disease, for it is comparatively frequent, or of anything unusual or distinctive in the clinical syndrome, but rather because of the use of salvarsanized serum intraspinally in this patient.

C., a boy aged 8½ years, was the second child in a family of five, the first having been still-born. The father contracted lues at 17, and according to his statement infected his wife. The blood-serum in his case gave a positive reaction while his wife, on the other hand, presented a negative Wassermann in both blood-serum and spinal fluid. The pressure of the latter was increased. Both the Noguchi and the Nonne tests were negative, as was the Lange colloidal gold reaction. There were twenty-six lymphocytes to the cubic millimeter. Physicians who had seen this woman at the time of her supposed infection were of the opinion that it was luetic. The blood-serum in two younger children aged 5½ years and 5 months, respectively, reacted negatively, while a third, 2½ years of age, gave a positive Wassermann in the blood-serum. The entire family, aside from the patient, gave no clinical evidence of syphilitic infection of the central nervous system, nor were there any symptoms of congenital syphilis in the other children.

Nothing abnormal was observed in C. until the fourth year, when it was noticed that his memory was failing and his face had a vacuous expression. He was sent to school in his seventh year but was unable to learn the simplest things. He was severely punished by his teacher because of his being so unruly and difficult to control. At this time also his walking became difficult and he used his hands in a clumsy manner. The father stated that the deterioration, both mental and physical, had been very rapid during the past year. When I saw him first he acted in a silly manner; he could not feed himself and needed constant oversight, and he talked like a young child.

Examination showed Argyll Robertson pupils, exaggerated knee-jerks, with ankle-clonus and Babinski in both feet. There was marked Rombergism. There was no nystagmus or epileptiform seizures; the background of the eye was normal. There were no signs of congenital syphilis. Serobiologic findings were increased pressure in the spinal fluid and positive Wassermann in both blood-serum and spinal fluid, the latter in all dilutions down to 0.05 c.c. Lange's colloidal gold test gave the characteristic curve of paresis. Noguchi positive; Fehling's normal; lymphocytosis seventy-two to a cubic millimeter.

Before the introduction by Swift and Ellis of the intraspinal method for the injection of salvarsanized serum, few physicians considered juvenile paresis as worthy of treatment because of its being so utterly hopeless. In 1910 Abraham treated a case with intramuscular injections of salvarsan without benefit. In April, 1913, Cotton used salvarsanized serum intraspinally in a case of juvenile paralysis with decided benefit clinically and serobiologically. "It is fair to assume," says Swift, "that arsenic or other drugs introduced into the spinal canal by means of lumbar puncture reach all points of the cerebrospinal system (at least the larger cavities) which are bathed by the cerebrospinal fluid."

The experiments at the Rockefeller Institute with the direct injection of neosalvarsan into the spinal canal, as well as the unfortunate experience at Los Angeles, should be sufficient warning to prevent its further use in this manner, notwithstanding the brilliant work being done by Ravaut and Marinesco with the *in vitro* method. Whatever the anatomic facts may be, the superiority, clinically and serobiologically, of the intraspinal use of salvarsanized serum over all other methods, is beyond cavil or question.

C. has received eight intravenous injections, each of 0.25 gm. of salvarsan followed the next day by an intraspinal injection of 30 c.c. of 40 per cent. solution of salvarsanized serum. The serobiologic reduction

* Read before the American Neurological Association, Albany, N. Y., May 8, 1914.

has been very slight. The pressure of the spinal fluid is normal; lymphocytes three to the cubic millimeter. Blood-serum is less positive, spinal fluid unchanged. The paretic curve of Lange's colloidal gold test remains unchanged.

Clinically, improvement has been more noticeable. C. can now feed himself; his silly actions and vacuous expression have disappeared; he is much brighter mentally, requires less oversight, observes things much more than formerly, shows some interest in games and talks much more normally. His gait is greatly improved. His parents and all others who have come in contact with him notice the difference; yet notwithstanding all this apparent improvement he has just had his first epileptiform seizure.

It will be observed that Lange's colloidal gold test, which I believe has a real corroborative value, gave the curve of paresis in this patient. In every case of paresis or taboparesis in which we have employed it, it has given the typical reaction of this disease.

In two cases of multiple sclerosis Kaplan observed that one gave the curve of paresis and the other reacted negatively; one case of multiple sclerosis which we examined with this test also gave the latter reaction. A case of tabes without any mental symptoms in a professional man of unusual mentality gave the curve of paresis, while two other tabetics gave that of tabes. According to Jelliffe, if the four reactions are positive, small amounts of spinal fluid being used (from 0.05 to 0.2 c.c.), the diagnosis is almost certainly paresis. In one of our cases in which there were no mental symptoms whatever, nothing except an Argyll Robertson pupil and a left hemiplegia, due to a luetic endarteritis, the serobiologic findings being as above, the Lange test gave the typical paretic curve.

Does this mean that in both these cases with no paretic indications paresis will ultimately develop? In several cases in which there have been serobiologic reductions there have been no changes in the paretic curves. Much further observation will be necessary to determine the real significance of this reaction.

In three cases of paresis, in all of which six or more injections of salvarsanized serum have been given, there have occurred two remissions, one of which lasted about two months, while the other one still persists. The third case, belonging to the demented type, has shown no improvement. In the cases which remitted there were very decided serobiologic reductions; in the unimproved patient these were very slight. Our experience has been that clinical betterment and serobiologic reductions go hand in hand. Nothing can be hoped for from the intraspinal method in advanced paresis, yet as Cotton states, there are no contra-indications to its use.

The reaction following the intraspinal injection of salvarsanized serum is as a rule negligible. The temperature seldom reaches 100; usually it is about 99, and the increase lasts from twenty-four to forty-eight hours. Formerly we observed higher temperatures, but with an improved technic they have disappeared. There is a marked increase in the lightning pains of tabetics for twenty-four or forty-eight hours after injection, but aside from the period of the injection these appear to be greatly benefited. The relief of dribbling and retained urine is sometimes truly remarkable.

In only one instance have we observed any untoward symptoms. This was a case of acute luetic meningomyelitis developing on a tabetic base. Twenty-four hours after the fourth intraspinal injection (there was practically no reaction following the three preceding ones), the patient became restless, anxious, and developed slight muscular twitchings. Temperature and pulse were normal. Within four hours the former had risen to 104.2, and the pulse was 100. The patient was absolutely unconscious and remained so for three days. The neck and back were rigid, the Kernig sign was marked and there was every indication of a suppurative meningitis, but the spinal fluid was sterile. The patient gradually improved and is now much better than before he received the injection. Without doubt this is an instance of aseptic chemical meningitis due to the intraspinal use of salvarsanized serum. Swift and Ellis call attention to the fact that the intraspinal injection of salvarsanized monkey-serum in the normal monkey may cause a large increase of cells in the spinal fluid, chiefly polymorphonuclears. In our more than seventy-five injections we have never seen any increase of the polymorphonuclear leukocytes following an injection of salvarsanized serum except in the case above mentioned and in one paretic, when a lumbar puncture caused an intraspinal hemorrhage which cleared up in about four weeks.

There can be little doubt that an aseptic, chemical meningitis presenting all the manifestations, clinical and pathologic, of an acute suppurative meningitis without the infecting organism, may arise from the introduction into the spinal canal of a foreign serum (Sicard, Sophian, Sladen, Brem). My case demonstrates that the same alarming symptoms may follow the injection of the salvarsanized serum.

Endicott Arende.

Accidental Electrocution by a Weak Current.—Mr. S. was employed in handling pickled fish on a fish wharf. The immense fish-storage shed in which he worked was lighted by electricity in sections, the system being a part of that which operated the plant of the electric light company on the next wharf, the transformer serving for both lighting systems. The small switch-room was in the corner of the lower floor of an adjacent wooden building. At about 11 a. m., Oct. 2, 1913, a dark, misty day with occasional rain, S. desired to work in another part of the shed and therefore went over to the switch-room to adjust the switches. As those who used the switch were generally workers in pickle, salt was present on the damp floor and woodwork. S. did not at the time have rubber boots on. He touched the switch and then leaned against the wall in a crouching position, which was observed by another workman who seized him and threw him out of the switch-room on the asphalt walk, receiving as he did so a violent electric shock. When I arrived a few minutes later, I found no pulsation at the wrist and no heartbeat, but efforts at resuscitation were continued for about one hour when the patient was pronounced dead. The necropsy, made by Medical Examiner S. F. Quimby and witnessed by several physicians, was delayed by legal formalities; it revealed no previously existing pathologic conditions which could have produced death at that time. No method of preservation had been used and it was observed that post-mortem rigidity was less than normal and the skin color more life-like than is usual. The possibility of crossed wire having been eliminated and a test having shown that the voltage of the current which passed through the body of S. did not exceed 111, it was decided that he had been electrocuted by a current not exceeding this strength, which passed through him while his clothes and body were damp from being in pickle and the switch-room also damp with pickle.—C. H. Morrow, M.D., Gloucester, Mass.

New Instruments and Suggestions

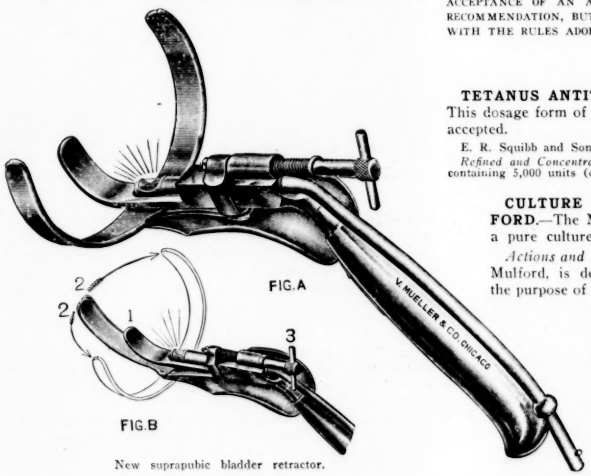
A NEW SUPRAPUBIC BLADDER RETRACTOR

B. C. CORBUS, M.D., CHICAGO
Instructor in Genito-Urinary Diseases, Rush Medical College

For descriptive purposes, this instrument can be divided into three parts, (1) the shaft, (2) retracting blades, and (3) the light-carrier. The shaft is again subdivided into (1) the vertical handle, and (2) the horizontal main section.

The vertical section is merely a rounded shaft, shaped so as to be easily held in the hand, while retracting. At the lower end is a hole to admit the peg of the light-staff, thus preventing any free play of the light apparatus after its adjustment.

The main or horizontal section of the shaft with its connections serves as a posterior abdominal and bladder-wall retractor, admits the light-staff, serves as a post for the sliding square connecting the screw (3) and the small arms of the bladder blades and carries a pivot-peg for the attachment of the main retracting arms. Through its center is the canal admitting the light-staff. On the upper surface is the screw (3) attached to the sliding square, and so threaded that after the insertion of the closed blades, as seen in Figure B, four complete revolutions open the blades widely. Protruding from the under aspect of the main section, immediately behind the light, is placed the pivot-peg. At the opposite end a strip



New suprapubic bladder retractor.

(not shown in the illustration) is attached, serving to fix firmly the wide posterior abdominal retracting blade. The latter, by the adjustment of the bladder blades to the pivot-peg, is at this point also anchored.

The true bladder-blades are of two sizes, small and large, according to the size and contractility of the bladder. Each set of blades consists essentially of two separate arms with rounded edges to avoid injury to the bladder mucosa on opening, and are jointed separately to the pivot-peg. The blades are also connected by two small arms to the sliding square, whose upward or downward passage controls the opening or closing of the retracting blades. The connections are all slip-on joints, so as to permit expeditious adjustments of the blades in changing, the whole making a unique combination of abdominal and bladder-wall retractor.

The lighting apparatus completes the instrument and is rather unique in the brightness of its cold tungsten bulb, the ease of its admission and removal for cleansing in case of obscuring the lamp by blood, and finally the surety of good electrical contact at the end of the staff by the spring-bayonet contact points.

The instrument on introduction through the suprapubic incision occupies no more space than the index-finger.

As the bladder is capable of being distended to a greater degree in the transverse diameter, this instrument is particularly advantageous in examining the internal urethral orifice, both before and after prostatectomy, in suturing over the cut surfaces of the mucosa after prostatic enucleation, in excising tumors and all operations on the ureter that are made intravesically.

32 North State Street.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

TETANUS ANTITOXIN.—(See N. N. R., 1914, p. 243). This dosage form of an accepted proprietary article has been accepted.

E. R. Squibb and Sons, New York.

Refined and Concentrated Tetanus Antitoxin.—Marketed in packages containing 5,000 units (curative dose) put up in syringe containers.

CULTURE OF BULGARIAN BACILLUS, MULFORD.—The Mulford culture of Bulgarian bacillus is a pure culture in tubes of the *Bacillus bulgaricus.*

Actions and Uses.—The culture of Bulgarian bacillus, Mulford, is designed for internal administration for the purpose of establishing lactic-acid-producing bacilli in the intestines. It is claimed that these bacilli are of value in diseases and toxic conditions due to putrefaction in the intestines and are of service in arresting putrefaction in wounds, abscesses and in the various body cavities. Thus it is said to be beneficial in chronic suppurative processes of the nasal passages, and the accessory sinuses, the middle ear, the endometrium and of the vagina.

Dosage.—One tube of the culture in 3 tablespoonfuls of water containing a lump of sugar or taken in a half or full glass of milk. This dose should be repeated morning and evening after meals. The tubes must be kept in a cold place and should not be used after the date stamped on the package.

Manufactured by H. K. Mulford Company, Philadelphia. No U. S. patent or trademark.

LACTOBACILLINE TABLETS.—Tablets containing a pure culture of the *Bacillus bulgaricus.*

Actions and Uses.—The bacilli contained in lactobacilline tablets give rise to the production of considerable quantities of lactic acid, which tends to restrain the growth of putrefactive organisms. They are said to be useful in diseases of the alimentary tract and in such general diseases as are believed to depend on putrefaction in the intestines.

Dosage.—One or two tablets after meals. Lactobacilline tablets are marketed in boxes containing eight tubes of six

tablets each, with an expiring date stamped on the label. They should be kept in a cold place.

Manufactured by the Ferment Company, New York (The Franco-American Ferment Company, New York).

Lactobacilline tablets are prepared from the pure cultures of the *B. bulgaricus* which is mixed with lactose and a suitable non-potent mechanical vehicle, slowly dried and compressed. Each tablet contains an abundance of viable *B. bulgaricus* in pure culture and should coagulate 1 liter of sterilized milk in from thirty-six to forty-eight hours when incubated at from 40° to 44° C.

LACTOBACILLINE LIQUIDE, CULTURE A.—Lactobacilline liquide, Culture A, is a pure culture in tubes of the *Bacillus bulgaricus* grown in a neutralized sugar bouillon, each tube containing from 5 to 6 Cc.

Actions and Uses.—See Lactobacilline Tablets.

Dosage.—One or two tubes of the culture are taken twice a day in a small quantity of sweetened water before meals. The tubes should be kept in a cold place, and should not be used after the date stamped on the package.

Manufactured by the Ferment Company, New York (The Franco-American Ferment Company, New York).

One Cc. should coagulate 1 liter of sterile milk in from twelve to twenty-four hours when incubated at from 37.5° to 40° C.

The object of this liquid culture is to secure the maximum quantity of virile and active organisms in a nutrient medium for direct administration.

LACTOBACILLINE LIQUIDE, CULTURE D.—Lactobacilline liquide, Culture D, is a pure culture in tubes of the *Bacillus bulgaricus* grown in a neutralized bouillon.

Actions and Uses.—See Lactobacilline Tablets.

Dosage.—One or two tubes of the culture are taken four times a day in a small quantity of water. The tubes should be kept in a cold place and should not be used after the date stamped on the package.

Manufactured by the Ferment Company, New York (The Franco-American Ferment Company, New York).

Lactobacilline Liquide, Culture D, Small.—Tubes containing 5 Cc. of pure cultures of the *Bacillus bulgaricus* grown in a neutralized bouillon.

Lactobacilline Liquide, Culture D, Large.—Tubes containing 16 Cc. of pure cultures of the *Bacillus bulgaricus* grown in a neutralized bouillon.

This culture contains a minimum amount of sugar and a heavy growth of virile and active organisms. One Cc. should coagulate 1 liter of sterile milk in from twelve to twenty-four hours when incubated at from 37.5° to 40° C.

LACTOBACILLINE LIQUIDE, INFANT'S CULTURE.—Lactobacilline liquide, infant's culture is a pure culture in tubes of the *Bacillus bulgaricus* in a whey medium.

Actions and Uses.—This preparation is employed in the treatment of diarrhea or dysentery in nursing infants or young children.

Dosage.—One or two tubes a day, administered in an equal quantity of sterile water.

Manufactured by the Ferment Company, New York (The Franco-American Ferment Company, New York).

One Cc. of this culture should coagulate 1 liter of sterilized milk in from twelve to twenty-four hours when incubated at from 37.5° to 44° C.

LACTOBACILLINE GLYCOGENE TABLETS.—Tablets containing pure cultures of the *Bacillus bulgaricus* and the *Glycobacter peptolyticus.*

Actions and Uses.—The *Glycobacter peptolyticus* transforms into sugar the amylaceous substances in the diet, thereby furnishing a pabulum for the *B. bulgaricus*, which in turn transforms the sugar into lactic acid. These tablets are designed as a prophylactic against intestinal diseases, as well as a remedial agent in the treatment of ailments due to intestinal putrefactions, auto-intoxications, etc.

Dosage.—One or two tablets two hours after each meal.

Manufactured by the Ferment Company, New York (The Franco-American Ferment Company, New York).

Lactobacilline glycogene tablets are prepared from the pure cultures of the *B. bulgaricus* and the *Glycobacter peptolyticus* which are mixed with lactose and a suitable non-potent mechanical vehicle, slowly dried and compressed. Each tablet contains an abundance of viable bacilli and of glycobacter spores. Each tablet should coagulate 1 liter of sterilized milk in forty-eight hours when incubated at from 40° to 44° C. The characteristic film of the *Glycobacter peptolyticus* should be produced on nutrient bouillon in from twenty-four to thirty-six hours.

LACTOBACILLINE GLYCOGENE LIQUIDE.—Lactobacilline glycogene liquide is a pure culture in tubes of the *Bacillus bulgaricus* and the *Glycobacter peptolyticus.*

Actions and Uses.—See Lactobacilline Glycogene Tablets.

Dosage.—One tube in a wineglassful of water two hours after each meal. The tubes should be kept in a cold place and should not be used after the date stamped on the package

Manufactured by the Ferment Company, New York (The Franco-American Ferment Company, New York).

Lactobacilline Glycogene Liquide, Small.—Tubes containing 5 Cc. of pure cultures of the *Bacillus bulgaricus* and the *Glycobacter peptolyticus.*

Lactobacilline Glycogene Liquide, Large.—Tubes containing 16 Cc. of pure cultures of the *Bacillus bulgaricus* and the *Glycobacter peptolyticus.*

One Cc. should coagulate 1 liter of sterile milk in twenty-four hours when incubated at from 37.5° to 40° C., and should produce the typical film of the *Glycobacter peptolyticus* when grown on nutrient bouillon.

LACTOBACILLINE MILK TABLETS.—Tablets containing pure cultures of the *Bacillus bulgaricus* and *Bacillus paralacticus.*

Actions and Uses.—Lactobacilline milk tablets are used in the preparation of scientifically soured milk which serves as a means of administration of the *B. bulgaricus* and also possesses a nutritive value. It is used as a palatable nourishing drink, and in cases of intestinal indigestion and auto-intoxication.

Dosage.—One tablet should be placed in 1 liter (quart) of sterilized milk and incubated for twenty-four hours at 40° C.

Manufactured by the Ferment Company, New York (The Franco-American Ferment Company, New York).

Lactobacilline milk tablets are prepared from pure cultures of *B. bulgaricus* and *B. paralacticus* which are mixed with lactose and a suitable non-potent vehicle, slowly dried and compressed.

LACTOBACILLINE SUSPENSION.—Lactobacilline suspension is a pure culture in tubes of the *Bacillus bulgaricus* grown in a neutralized bouillon medium.

Actions and Uses.—This culture tends to inhibit the growth of deodorant, putrefactive and pathogenic organisms. It acts as an antiseptic and has been found beneficial in chronic suppurative conditions of the nasal passages, antrum, middle ear, in chronic abscesses, and in puerperal putrefactive processes of the endometrium and vagina.

Dosage.—The parts to be treated should be thoroughly cleansed with sterile water or a warm saline solution. The amount of culture to be applied depends on the extent and condition of the involved area, one or several tubes being necessary. The culture should be kept in a cold place, and should not be used after the date stamped on the package.

Manufactured by the Ferment Company, New York (The Franco-American Ferment Company, New York).

Lactobacilline Suspension.—Tubes containing 5 Cc. of pure cultures of the *Bacillus bulgaricus.*

Lactobacilline Suspension Surgical.—Tubes containing 20 Cc. of pure cultures of the *Bacillus bulgaricus.*

One Cc. of this culture should coagulate 1 liter of sterilized milk in from twelve to twenty-four hours when incubated at from 37.5° to 44° C.

LACTOBACILLINE MILK FERMENT.—Lactobacilline milk ferment is a pure culture in tubes of the *Bacillus bulgaricus* and *Bacillus paralacticus.*

Actions and Uses.—See Lactobacilline Milk Tablets.

Dosage.—One tube should be placed in a liter (quart) of sterilized milk and incubated for twenty-four hours at 40° C.

Manufactured by the Ferment Company, New York (The Franco-American Ferment Company, New York).

The organisms in this ferment are grown in a neutral sugar bouillon.

Typhoid Death-Rate and the Army.—The death-rate from typhoid fever per hundred thousand population in the registration area of the United States during the year 1912 (the last report available) was 16.5. The absence of a single death from typhoid in the nearly 100,000 officers and men of the Army who were protected by vaccination contrasts favorably with the 16.5 deaths per an equal number of the general population.—C. C. Bass, M.D., in *Am. Jour. Trop. Dis. and Prev. Med.*

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SATURDAY, JUNE 13, 1914

THE CONSTANCY OF ENDOGENOUS URIC-ACID EXCRETION

Among those who helped to overthrow the older notion that the urea and uric acid excreted in the urine have a common origin was the Bohemian physiologist, Professor Mares of Prague. As early as 1887[1] he formulated the hypothesis that uric acid is the product of the activity of cell protoplasm, whereas urea arises directly from the disintegration of proteins ingested as food. In the divorce of these two nitrogenous substances, urea and uric acid, which were long believed to have a direct genetic interrelationship, uric acid was accordingly made a derivative of that chemical process which forms the basis of cellular activity. The quantity of urea formed in a given time was clearly seen to depend above all on the amount of nitrogenous matter absorbed. When the possible relation of nucleoproteins and purins to uric acid began to be appreciated, Mares insisted that not only the nucleoproteins of the leukocytes (as had been previously maintained), but likewise those of any body-cells may give rise to uric acid.

To-day it is believed that both food-purins and tissue-purins and their precursors can give rise to the excretion of uric acid in man; and the physiologist distinguishes accordingly between the uric acid of endogenous and that of exogenous origin. The idea that the former can be derived in the human body by direct synthetic processes is not commonly accepted. It was Mares in particular who early advanced the conclusion that although the urea output of an individual on a purin-free diet may vary within very wide limits, the excretion of uric acid under these conditions approaches a constant which is fixed for the individual. So long as the view was sustained that uric acid is both formed and destroyed in the organism of man[2] it was not easy to understand how the remarkable fixity of the endogenous quota of uric acid could be maintained. For this reason, in part, the work of Mares was neglected and ceased to attract much recognition. Now that uric acid appears to be a true end-product of human purin metabolism[3] rather than an intermediate stage, the fixed character of the amount excreted when no purins are found in the diet may be viewed in a new light. Constancy in output can thus be interpreted as the expression of some definite function in the body, such as the routine activity of tissue-cells. It does not apply to those found in the muscles; for vigorous exercise does not markedly alter the endogenous output of uric acid. The secretory glands have been suggested as a more probable source of the latter.

If further evidence is needed to emphasize the often observed constancy in the quantity of endogenous uric acid eliminated by one person—a feature substantiated by many investigators in different parts of the world—it may be found in the latest contribution from Mares' laboratory. His assistant, Dr. Faustka,[4] has reinvestigated quantitatively the output of uric acid in some of Mares' earlier subjects, under the original conditions of diet—in one case after an interval of twenty-five years, the age of the subject at the second trial being 70. The variations in the output at the two periods of life were not more than a few milligrams. In 1886 the output was 8.11 mg. per kilogram of body weight in twenty-four hours, as compared with the figure 8.2 mg. for 1911. Other comparable cases have enforced a similar lesson, namely, that the quantity of uric acid excreted by the adult human organism in definite periods under fixed conditions is a physiologic constant.

It must not be assumed, however, that no importance attaches to an estimation of uric acid in the urine unless the endogenous constant is known. The dietary or exogenous sources of this urinary component are so varied and large in comparison with the quota furnished by the body itself, independent of the food intake, that the total daily output, under the usual conditions of feeding, is not significantly modified by incidental variations in the endogenous output. The essential importance of a study of the latter feature lies in obtaining one more constant, like endogenous creatinin, from which to estimate variations incidental to disease when suitable conditions arise.

1. Mares, F.: Sur l'origine de l'acide urique chez l'homme, Arch. slaves de biol., 1887, iii, 207; Sborn. lek., 1888, ii, 1.

2. The exposition of this view will be found in a series of editorials entitled Truth and Poetry Concerning Uric Acid, THE JOURNAL A. M. A., Jan. 14 to May 13, 1905.

3. Uric Acid, editorial, THE JOURNAL A. M. A., Aug. 17, 1912, p. 545.

4. Faustka, O.: Ein experimenteller Beitrag zur Lehre von der individuellen Konstanz der Harnsäure beim Menschen, Arch. f. d. ges. Physiol., 1914, clv, 523.

SANITATION ON THE ISTHMUS OF PANAMA AND ON THE RAND

The report by Surgeon-General Gorgas[1] on the health of the mine laborers of the Rand which appears in this issue contains data and conclusions of the

1. Gorgas, W. C.: Recommendation as to Sanitation Concerning Employees of the Mines on the Rand Made to the Transvaal Chamber of Mines, p. 1855, this issue.

highest importance. The excessive death-rate from pneumonia among the imported or "recruited" native laborers is the central theme of the report, and Gorgas' valuable and unique Panama experience has been freely drawn on for comparison. It seems that for some time the pneumonia-rate on the Rand has been very high, ranging in 1912, for example, from 26.3 in the 21,000 tropical natives to 8 in the 199,000 non-tropical. Apart from the differences associated with race or origin, the suggestive fact is noted that the newly arrived native is by far the greatest sufferer from pneumonia. In 1912, out of 2,031 deaths from pneumonia among the Rand laborers, 1,199 were deaths of men who had been at the mines less than six months. The difference between the tropical and non-tropical natives may be at bottom of the same character since, according to Gorgas, "in general, the tropical is the non-civilized native who has had little contact with the white man's diseases, and the non-tropical, the native who has had more or less contact with civilization and the white man's diseases."

Taking this fact, which seems to be the only significant epidemiologic fact shown by the Rand statistics, as a starting point, Gorgas proceeds with a masterly analysis of the pneumonia situation as observed on the Isthmus of Panama. In the construction of the Panama Canal the conditions with regard to pneumonia were at the outset very similar to those found on the Rand. In 1906 the pneumonia death-rate among the negroes brought from the West Indies to the Canal Zone was 18.74 per thousand. With the aim of reducing this very high rate a careful study was made of a number of factors that might influence pneumonia. Altitude, ventilation and the effect of sleeping in wet clothes were in turn examined as possible predisposing causes, but in each instance with negative results. "The only difference in susceptibility was shown to be governed by the length of time that the laborer had been on the Isthmus." Pneumonia was four and one-half times as frequent among the men who had been on the Isthmus less than three months as among the men who had been on the Isthmus more than three months. In the Panama Canal Zone, however, the pneumonia-rate did not remain high. The pneumonia death-rate figures are: 1906, 18.74; 1907, 10.61; 1908, 2.60; 1909, 1.60; 1910, 1.66; 1911, 2.24; 1912, 1.30. Now the significant fact is that the sudden and remarkable drop after 1907 was coincident with a radical change in the manner of living. In 1907 the negro laborers were allowed to scatter out along the line of the Canal to "build each man his hut, with a small cultivable piece of land, and bring over his family." It is evident that under such conditions the opportunities for the transfer of pneumococci from carriers to non-immunes are much less favorable than under the barrack system. Gorgas definitely attributes the sudden and permanent drop in pneumonia on the Isthmus to the scattering of the negroes in independent dwellings.

Applying these facts to the Rand situation, the conclusion is drawn that the high pneumonia-rate on the Rand is due to the same factor of barrack overcrowding which was apparently responsible for the initial high pneumonia-rate on the Isthmus of Panama. In accordance with the Panama experience the recommendation is made that so far as possible the negro laborers be allowed to bring in their families and live with them in individual buildings. Where this is not possible much roomier native quarters should be provided. The present allowance (about 14 feet of floor-space!) is much too limited.

Gorgas' conviction that under the conditions described pneumonia is a disease spread largely by contact does not seem likely to pass unchallenged, to judge from the opinion recently expressed by Maynard,[2] who deals with the same body of Rand data reviewed by Gorgas. Maynard declares that "a study of these figures shows definitely that if infections from case to case play any part in determining the prevalence of this disease among 'tropical natives,' it can be, at most, but a very small one." Nevertheless, in view of the striking course of events at Panama, it is hard to see a way of escape from the conclusions reached in Gorgas' investigation.

Gorgas' article is full of details of an unusually interesting character. In Gorgas' opinion, vaccination against pneumonia is worth considering as a protective measure. In 1912 at the Premier Mine, 17,500 inoculated had a pneumonia death-rate of 6.89, and 6,700 uninoculated a death-rate of 17.72.

Those who believe that housing is a matter of real sanitary importance[3] will find support for their views in Gorgas' opinion as to the influence of the crowded quarters on the Rand. "The general objection to such crowding is that it causes the respired air to become vitiated. My great objection to such crowding is that it forces the occupants into close personal contact, and therefore largely increases the spread of any infectious disease."

The advocates of the restriction of liquor-selling will find comfort in Gorgas' views as to the value of even localized prohibition. "Alcohol for the natives, I believe, is an unmitigated evil. It is in no way necessary for his health; in fact it is always hurtful. . . . The two Panama towns of Colon and Panama, at the northern and southern end of the Canal, are not under the jurisdiction of the commission as far as regards liquor-selling. There is no restriction on an employee going to these towns and getting liquor as he wishes and bringing it out into the Zone to his own

2. Maynard, G. D.: An Enquiry into the Etiology, Manifestations and Prevention of Pneumonia Amongst Natives on the Rand, Recruited from Tropical Areas, South African Institute for Medical Research, Memoir 1, Nov. 1, 1913.

3. Housing and Sanitation, editorial, THE JOURNAL A. M. A., May 9, 1914, p. 1479.

home. The only prohibition is that it must not be sold in the Zone. But to get liquor he has to make a longer or shorter railroad trip and go to considerable effort. Our experience has shown that there are a considerable number of men who do not care enough for liquor to make the effort, and therefore do without. Of course there are a large number who bring liquor out and drink as much as ever; but on the whole our prohibition of its sale has largely decreased drunkenness. It has increased the efficiency of our working force so much that generally the men in charge of the laborers in the different districts have asked to have their districts included within the prohibited area. I believe that it would be best for the native on the Rand to have no alcohol at all."

EXPERIMENTAL PERNICIOUS ANEMIA AND ALIMENTARY INTOXICATION

The causes of pernicious anemia still remain a problem. Many have inclined to the hypothesis that gastro-intestinal sepsis may be concerned in the pathologically increased hemolysis of which all modern writers find convincing evidence. The belief that the disintegration of red blood-corpuscles is connected in some way with the toxic effect of substances generated in the alimentary tract is reflected in some of the current modes of treatment. By some clinicians active measures are employed to clear the intestinal canal more promptly and effectively than is ordinarily done. The daily washing out of the large bowel through a high rectal tube, combined with dietary measures calculated to reduce bacterial decompositions in the digestive tube, has been advocated; and beneficial results following the liberal use of laxatives have been reported. In discussing them Richard Cabot has conservatively remarked that it is not possible as yet to distinguish between *post hoc* and *propter hoc* with regard to the improvements noted.

There is little doubt that certain known intestinal parasites are capable of giving rise to severe types of anemia. Faust and Tallquist[1] isolated a hemolysin from the bodies of *Bothriocephalus*, for example; and in this case they believed that they could actually identify as oleic acid the hemolytic agent obtained from the parasites. Findings of this sort have suggested that other hemolytic anemias of man may be caused by chemical compounds which reach the blood-current via the alimentary tract. In the case just cited these hemolysins have their origin in the bodies of animal intestinal parasites. In view of the fact that in the bowel there occur at times profound bacterial changes which result in the formation of substances quite unlike those produced in normal aseptic digestion, it is a short step to charge some of these largely unknown derivatives of microbial activity with hemolytic propensities. Such vague hypotheses, however, must be substantiated or disproved by experiment.

The amins have long been recognized as products of bacterial changes wrought in the proteins and their derivatives under conditions which may obtain in the gastro-intestinal tract. Many years ago Brieger of Berlin directed attention to such compounds; and two of them, putrescin and cadaverin — which are, respectively, tetramethylenediamin and pentamethylenediamin, and are genetically related to familiar protein digestion products—rank as typical so-called ptomains. Among the newer compounds of this group oxyphenylethylamin (tyramin) has become especially conspicuous of late. It has been isolated from putrid meat,[2] from certain types of cheese,[3] and —what is of especial medical interest—from ergot[4] (*Secale cornutum*). Oxyphenylethylamin is produced from the amino-acid tyrosin by various races of bacteria, among them *Bacillus coli communis*,[5] a known inhabitant of the alimentary tract of man. It is easy to conceive that disturbances in the antagonism between the micro-organisms developed in the bowel might lead to a preponderance of groups which easily produce amins of the sort represented by oxyphenylethylamin. Imidazolylethylamin (histamin) is an added case in point.

These amins are known to be endowed with pronounced pharmacologic potencies and have already found their way into therapeutics. The effects should now be ascertained not only of the heroic doses occasionally necessary in medication, but also of the far smaller quantities comparable with those which might be gradually formed and slowly absorbed under the conditions actually obtaining in the gastro-intestinal tract. An interesting beginning has been made in the medical clinic at the University of Kyoto, Japan, in Professor Sasaki's laboratory. Iwao[6] has subjected animals to repeated daily subcutaneous injections of very small doses of oxyphenylethylamin. Severe anemia of the pernicious type was thereby developed. The blood-pictures deviated strikingly from the normal.

The salts of oxyphenylethylamin do not cause hemolysis *in vitro*. The explanation of the profoundly destructive effects exerted on erythrocytes by the continued administration of this compound must lie in some process in which the damage to the blood-cells is an indirect or secondary consequence. An

1. Faust, E. S., and Tallquist, F. W.: Arch. f. exper. Path. u. Pharmakol., 1912, lvii, 375. The Toxic Properties of Familiar Intestinal Parasites, editorial, THE JOURNAL A. M. A., May 4, 1912, p. 1377.

2. Barger and Walpole: Jour. Physiol., 1909, xxxviii, 343.

3. Winterstein and Küng: Ztschr. f. physiol. Chem., 1909, lix, 138.

4. Barger and Dale: Arch. f. exper. Path. u. Pharmakol., 1909, lxi, 113.

5. Sasaki, T.: Ueber die biochemische Umwandlung primärer Eiweissspaltprodukte durch Bakterien, I, Das Verhalten von Tyrosin gegen Bact. coli commune, Biochem. Ztschr., 1914, lix, 429.

6. Iwao, T.: Beiträge zur Kenntnis der intestinalen Autointoxication, I, Ueber den Einfluss von p-Oxyphenyläthylamin auf das Meerschweinchenblut, Biochem. Ztschr., 1914, lix, 436.

isolated group of experiments of this sort, however notable, is far from solving the etiology of pernicious anemia; but it represents a rational sort of experimental attack on the problem. The results show the actual production of an experimental anemia by the agency of a recognizable chemical compound of a type which can, and undoubtedly does at times, arise in the alimentary tract. The thorough study of such well-defined substances represents an intelligent way to approach the phenomena of so-called auto-intoxication.

SUGAR IN CARDIAC METABOLISM

An age of specialization has been reached in the field of metabolism. A few years ago it was the body as a whole that commanded the attention of the student of nutrition; but to-day we are learning to differentiate and recognize the special demands of individual organs and tissues. Each has its own physiologic function to perform and it is possible that each develops a special requirement for energy or the individual nutrients.

Little is known as yet regarding the gaseous metabolism of isolated organs, or of the extent to which various foodstuffs are used by them as sources of energy. It has been clearly demonstrated that incident to their physiologic work the lungs, the kidneys and other glands, skeletal muscles, heart, etc., generate carbon dioxid and require oxygen. Of late the heart in particular has been the subject of detailed investigation because it can readily be made to continue its usual action when detached from the rest of the body and perfused with circulating mediums that can be altered at will. The determination of the respiratory quotient, that is, the ratio between the carbon dioxid produced and the oxygen consumed in a given period, is an excellent index to the character of the metabolism in progress. When carbohydrates alone are burned up in the organism, the respiratory quotient $\frac{CO_2}{O_2}$ is 1; for the other foodstuffs it is lower.

The modern observations on the respiratory quotient of the isolated heart have shown it to vary within the same limits as those for the entire organism, for example, from 0.65 to 0.95 or more. This indicates that the metabolism of such an isolated organ is qualitatively closely allied to that of the body taken as a whole, or is even identical with it. In other words, the isolated heart has to a great extent the power to oxidize fully to their gaseous end-products the same cell or plasma constituents as the whole array of organs in the body has when they are working together in the normal way.

An interesting immediate confirmation of this has been furnished by Dr. C. Lovatt Evans[1] at the Institute of Physiology in University College, London. It is well known that the respiratory quotient of the entire organism is raised when carbohydrate food is taken in quantity; for this material is promptly burned in preference to other nutritive pabulum. So Evans has found that when glucose is added to the circulating blood of an isolated heart-lung preparation, the respiratory quotient of the preparation is raised. The respiratory quotient of the isolated heart is also markedly increased by previous carbohydrate diet, and it is then often decidedly higher (above 0.9) than that which is obtained after the addition of glucose to the blood. How important this dietary factor may be is indicated by the calculation that the normal heart of the dog, for example, obtains about one-third of its energy supply by the oxidation of carbohydrate. But in animals deprived of this foodstuff for some time the amount may be, and usually is, much less than this. Possibly the time may come when running expenses, so to speak, of the body's different departments can be itemized.

1. Evans, C. L.: The Effect of Glucose on the Gaseous Metabolism of the Isolated Mammalian Heart, Jour. Physiol., 1914, xlvii, 407.

THE PRICE OF LABOR EXPRESSED IN TERMS OF FOOD-FUEL

As man is a fuel-consuming machine, it requires no argument to emphasize the importance of knowledge concerning the food-fuel which he needs. It matters little whether instinct is an unerring guide in providing a suitable supply of nutriment for the individual. Unless food is available at a cost within the reach of those concerned, the possibility of inadequate maintenance at once arises. The question of the undernutrition of the masses or the underfeeding of any group in society, whether it be schoolchildren, the indigent sick or the poorest laborers in the community, cannot be solved permanently before the actual nutritive needs of all of these classes are ascertained on an indisputable scientific basis. Only then is it possible to determine if the failure to obtain adequate nourishment is due, in each case, to poverty, or to the lack of suitable food-supplies or to ignorance and perverted judgment in the purchase of the day's ration.

For this reason various "standards" have been proposed by physiologists and chemists for daily dietaries of persons of differing age, sex and occupation, and in different conditions of life. In general these estimates have been based on two distinct methods of ascertaining the suitability of a ration. By the one, the quantities of food actually consumed by individuals or known groups of persons have been noted. The other method consists in determining, by special metabolism experiments, the actual physiologic demand for food. This furnishes information concerning the needs of man in maintaining a nutritive equilibrium under selected conditions of activity rather than what he would eat if given the freedom of choice. This

method, being the more laborious and difficult mode of investigating dietary needs, has hitherto been employed less frequently in experimental inquiry than has the statistical method.

On the basis of the former procedure, in which the proportions of foodstuffs assumed to be needed are inferred empirically from those consumed in observed cases, nearly all of the widely quoted dietary standards have been established. Any one who hopes to interpret or employ them rationally must bear certain fundamental principles of nutrition in mind. The requirements of the body in terms of food-fuel or energy depend on the way in which food is used to build the organism and repair its waste, and above all on its heat- and power-yielding quality, particularly through the activity of the musculature. Bearing these facts in mind, it is obvious that the size of an individual is one of the factors which determine the need of food. If vigorous growth is still in progress, the demand of nutrients for new tissue construction may become noteworthy. Chief, however, stand the variations of demand caused by the unlike expenditure of energy in different occupations. The sedentary bookkeeper or seamstress requires a far smaller supply of energy than the wood-chopper or the washerwoman. It is a customary assumption that, because of her smaller average stature and lesser muscular performance, a woman requires on the average eight-tenths as much food as a man for corresponding muscular activity. It has also been assumed that children of different ages consume from three-tenths to eight-tenths as much as the man of the family. Such generalizations have become necessary whenever the food habits of people have been investigated by the observation of food purchase or consumption in entire families.

We shall not go far amiss if we express the current dietary standards, so far as they are based on the preceding mode of estimating them for conditions prevailing in the United States, in terms of the results compiled by Dr. Langworthy of the United States Department of Agriculture, as follows:

Occupation of Head of Family	Fuel Value of Food per Man per Day, in Calories
Man at very hard work	6,000
Farmers, mechanics, etc.	3,425
Business men, students	3,285
Inmates of institutions, little or no work	2,600
Very poor persons, usually out of work	2,100

Without denying in any way the importance and great value of such indirect data, one may frankly designate them as rather inexact. For this reason it is still desirable to check up their indications, whenever possible, by direct measurements of the energy transformations. Numerous results already collected by this method of investigation have given no occasion to question the general validity of the "standards" set by the less accurate statistical method. The latest of such metabolism studies is of particular interest because it was conducted under the conditions of work that represent in some adequate way the daily muscular performances of the persons concerned.[1] The experiments were conducted in the large respiration apparatus of the physiologic institute at the University of Helsingfors in Finland, the carbon dioxid output of the subjects being determined during periods of rest and characteristic activity, and calculated into terms of energy consumed. Making an allowance of 10 per cent. for the alimentary waste of food the gross results were as follows:

Men	Calories per Day
Tailor	2,600-2,800
Bookbinder	3,000
Shoemaker	3,100
Metal-worker	3,400-3,500
Painter	3,500-3,600
Cabinetmaker	3,500-3,600
Stone-cutter	4,700-5,200
Wood-cutter	5,500-6,000
Women	
Seamstress (by hand)	2,000
Seamstress (sewing machine)	2,100-2,300
Bookbinder	2,100-2,300
Housemaid	2,500-3,200
Washerwoman	2,900-3,700

These interesting figures not only give an impressive confirmation of the energy standard derived by less direct methods of investigation, but also bring into immediate, clear relief the great differences that the various trades and occupations entail. Such facts need to be taken into consideration in institutions in which the inmates are assigned to work as unlike as bookkeeping or sewing on the one hand, and wood-chopping or other forms of hard manual labor on the other. Such figures show the obvious physiologic injustice of doling out equal portions of the same ration to all of these persons, especially when free choice is restricted or practically impossible. Furthermore, it should be noted that the data of the Finnish physiologists are based on an eight-hour working day. Any lengthening of this period must affect the expenditure here represented.

It is impossible to determine from the cursory studies that have been made whether the scale of living or "standard of life" is actually much higher here, as has been asserted by some, than it is in Europe. One American authority, the late Professor Atwater, frankly believed that, considering the body as a machine, the American workingman is more strongly built and has a larger fuel-supply than his European brother. While it is not absolutely proved, it seems in the highest degree probable that the higher standard of living, the better nutrition, the large product of labor and the higher wages go together. The justification for any propaganda in favor of more liberal standards for dietaries rests in a measure on

1. Becker, G., and Hämäläinen, J. W.: Untersuchungen über die Kohlensäureabgabe bei gewerblicher Arbeit, Skandin. Arch. f. Physiol., 1914, xxxi, 198.

the truth of this belief. And, speaking aside for the moment, a glance at the figures which we have quoted shows that the proverbial advice to "mind one's business and saw wood" entails no mediocre performance in terms of calories per day.

SOME CONDITIONS INDUCING EXCESSIVE RESPIRATION

It has been pointed out by several investigators[1] that voluntary forced breathing in man may give rise to unpleasant and even alarming symptoms. The outcome apparently depends on a number of modifying factors. As a rule, in a short time after the forced breathing the subject either stops breathing altogether if his respiration is allowed to act involuntarily or he breathes in a very shallow and ineffective manner. Numbness and tingling in the hands and feet are reported to occur; and if the forced breathing has been of considerable duration — two or three minutes or longer — many subjects experience an oxygen want when the subsequent apnea sets in. The lips may turn blue; Cheyne-Stokes breathing may be initiated; and Henderson has called attention further to the occurrence of "light-headedness," polyuria, shivering, muscular weakness and other functional disturbances induced by prolonged forced breathing. He maintains that the symptoms evoked are similar to those of shock, and suggests that death from failure of respiration would probably result from vigorous voluntary hyperpnea for fifteen or twenty minutes.

There are various ways in which excessive respiration — hyperpnea — can be induced in man aside from the purely voluntary manner that has just been referred to. Pain is one of the natural stimuli calling forth hyperpnea. Anger, sorrow, fear and ether-excitement may induce a similar result. All of these phenomena may be attended or followed by what is sometimes spoken of as shock. Henderson, as is well known, has argued that the condition of shock which results in man from extreme physical suffering is, to a large extent, caused by the reduction of the carbon dioxid content of the blood and tissues as the result of the violent and prolonged hyperpnea caused by stimulation of afferent nerves. In contrast with this is the view that the ill effects produced by suffering are the expression of fatigue of the nervous system and of the heart, resulting from the intensity of the sensory irritations. This theory of the etiology of shock has been vigorously combated. We have no desire at this time to enter into a discussion of the nature of this much-debated subject. The underlying facts with respect to the physiologic effects of pain and ether, for example, on the respiration in man ought to be demonstrable quite independent of the interpretation which is put on the consequences thereof.

Hitherto much of the experimental work has been conducted on animals under conditions which approached extremes rarely found in man; or in the case of experiments on man the voluntary forced respiration has been somewhat unlike that which might arise in the exigencies of practice. Dr. A. L. Meyer of the University of Pennsylvania has approached the problem of hyperpnea and acapnia in its possible relation to "one of the most important symptom-complexes in medicine" by a direct study of the effect of moderate pain and of the incipient stage of anesthesia in man. In Haldane's laboratory at Oxford he determined the volume of air breathed, the respiratory exchange, and the alveolar carbon dioxid pressure on human subjects.[2] The device for securing experimentally the effect of moderate pain, the duration of which could be controlled, consisted in placing a clamp on the end of the little finger. This apparatus could be screwed down firmly and then released. The average pain was, according to the investigator, probably such as might be caused by a severe felon.

Pain of moderate intensity and short duration (two to three minutes) actually produces hyperpnea that can easily be measured. The alveolar carbon dioxid is diminished and the respiratory quotient increased. Ether in suitable low concentration produces hyperpnea in one minute. How vigorous it may become is illustrated by one case in which an air mixture containing 3.3 per cent. of ether produced an increase of 92 per cent. in the air respired; and on another occasion a mixture of 2.8 per cent. produced an augmentation of 66 per cent. The degree of excessive ventilation of the lungs varies in different persons; and with higher concentrations of ether the breathing is diminished. The alleged possibilities of inducing acapnic conditions in man are accordingly established.

1. Haldane and Poulton: Jour. Physiol., 1908, xxxvii, 390. Henderson, Yandell: Am. Jour. Physiol., 1909-10, xxv, 310; Respiratory Experiments on Man, THE JOURNAL A. M. A., April 11, 1914, p. 1133.

2. Meyer, A. L.: Hyperpnoea as a Result of Pain and Ether in Man, Jour. Physiol., 1914, xlviii, 47.

Current Comment

GOING TO ATLANTIC CITY?

THE JOURNAL for May 16 contained a preliminary announcement of the program for the Scientific Assembly and detailed information with regard to hotel accommodations at that city of hotels—Atlantic City. Before the next issue of THE JOURNAL reaches its readers, many members and Fellows will be on their way to the meeting-place. If arrangements have not already been made there is still time to complete them and to take advantage of the session. The usual large attendance undoubtedly will be increased because of the hot weather which prevails, making Atlantic City especially attractive. Even apart from the interesting scientific program of the Sections, Fellows who

go will be well repaid by meeting and exchanging ideas with professional brethren from all over the country, including the leaders and men in the forefront of investigation and research. Then, too, the setting of the meeting will be ideal: abundant comfortable hotel accommodations managed by men who are past masters in the art of providing for the comfort and pleasure of their guests, and the local profession who have always proved themselves gracious hosts and who have solved the problem of caring for heavy professional duties and at the same time greeting visiting physicians with a heartiness that assures all a welcome — all this has been the experience in the past, and Atlantic City improves every time the Association pays it a visit. It requires no gift of prophecy to foretell a delightful social good time, as well as a scientific treat. The Fellows who go to Atlantic City will work the better throughout the year for having thrown aside the routine and the demands of a busy practice for this short breathing-space.

THE SPREAD OF THE "SANE FOURTH" MOVEMENT

Probably at no time in the eleven years since THE JOURNAL began its agitation for a safe and sane Fourth has so much interest been manifest in such a number of cities so far in advance of our national holiday. Information from all over the country indicates that those cities in which our last year's report showed a high death- and accident-rate are bestirring themselves in the hope of preventing the repetition of last year's experience. As has been frequently pointed out, the city is directly responsible for the regulation of the Fourth and the prevention of the needless slaughter, maiming and blinding of children. Municipal ordinances are the only method by which this problem can be solved. In the report issued last August, THE JOURNAL showed that the total price in human life and suffering paid for the celebration of the Fourth of July during the past eleven years was 1,792 deaths and 39,488 injuries; that, although the number of injuries and fatalities had decreased during the past four years, the cities in which the old and barbarous methods of celebrating the Fourth were still followed, were maintaining or were even exceeding the records of previous years in the quota of deaths and injuries. Thus, while New York had reduced its record from 22 killed and 422 injured in 1907 to none killed and 65 injured in 1913, and Chicago during the same period had fallen from 16 killed and 151 injured in 1907 to 1 killed and 12 injured in 1913, Philadelphia, which had 7 killed and 248 injured in 1907, had 3 killed and 340 injured in 1913. What New York and Chicago have done, Philadelphia can do if she will. The death or injury of her children from Fourth of July accidents is a matter for which each city government is directly responsible. Other cities in which the number of killed and injured is still far too high are Pittsburgh, Cincinnati, Providence, R. I., Worcester, Mass., Syracuse, N. Y., Omaha, Neb., Grand Rapids, Mich., Hartford, Conn., Reading, Pa., Wilmington, Del., and Des Moines, Ia. The citizens of these cities would do well to demand from the city government, for the protection of their children, the passage of ordinances that will prohibit the sale of fireworks, and substitute for the former barbarous methods of celebration plans more in keeping with the day and the occasion which it commemorates.

TEACHING IN MUNICIPAL HOSPITALS

As we have remarked before,[1] a large hospital which does no more than care for the sick fulfils only a part of the function it owes to the community. It should contribute its share to medical education and research, and should therefore stand in such relation to a teaching institution as will permit the best possible use of the clinical material it affords. Many private hospitals and the state hospitals of Virginia, Michigan and Iowa have arranged such connections. We mentioned last week[2] that Yale Medical School, according to the terms of a gift made by the General Education Board of the Rockefeller Foundation, is called on to acquire control of the New Haven Hospital with its 260 beds. If the conditions of the gift are fulfilled, Yale will be the fifth medical school in this country to acquire control, by definite agreement, of the municipal hospital facilities in the community in which it is located. The Cincinnati Hospital with its 500 beds is utilized for clinical instruction by the College of Medicine of the University of Cincinnati. The medical department of the University of Georgia, by contract with the city of Augusta, has control in perpetuity of all the municipal hospitals now in existence or hereafter to be erected in that city. The medical department of the University of Louisville is able to make use of the clinical material afforded by the Louisville City Hospital with its 500 beds. The School of Medicine of Western Reserve University has control of the clinical facilities of the Cleveland City Hospital and St. Vincent's Charity Hospital, in addition to those afforded by private hospitals — in all, over 1,300 beds. In various other cities, the municipal hospital facilities are utilized for instruction to a greater or less extent under less formal arrangements. In marked contrast with such arrangements with hospitals elsewhere is the withholding from use in medical teaching of the abundance of splendid clinical material in the 1,700 beds in the great Cook County Hospital in Chicago. That the best interests of hospital patients are thus sacrificed is clear, since it has long been recognized that the highest standards of efficiency are found in those hospitals which are most closely related with high-grade medical schools. It is only through such relationships that the hospitals are kept in touch with the latest and best methods of diagnosis and treatment, since they aid in and get the benefits of the research work of the medical school. The public interests are likewise sacrificed in the lack of such a relationship, since one of the main functions of the hospital is not being exercised, namely,

1. The Educational Function of Hospitals, editorial, THE JOURNAL A. M. A., May 27, 1911, p. 1581.
2. Medical News, THE JOURNAL A. M. A., June 6, 1914, p. 1816.

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that of supplying material for the training of future nurses and doctors, who in turn would be stimulated to greater zeal in the recognition, treatment and prevention of diseases. It has repeatedly been shown that physicians are invariably more careful in their methods of diagnosis and treatment if they are being watched by a few bright, intelligent medical students. It is to be hoped that the closer relationships being established between private and municipal hospitals and leading medical schools elsewhere may point the way to similar relationships in Chicago and our other large cities.

THE DOCTOR'S DILEMMA

The other day a physician of Duquoin, Ill., was shot to death because he refused to answer a call to the family of the murderer. Such, at least, is the newspaper report, and it is probably correct. The following morning the Chicago *Tribune*, under the caption "The Doctor's Dilemma," contained an editorial that is so sensible and recognizes the situation so well that we quote it entire:

> When a child becomes sick at night the first thing the anxious parents think of is the doctor. They have no hesitancy to wake him up before dawn. They will drag him out of the house before breakfast. The few minutes he takes to dress seem ages to them. If they could they would transport him on wings to their sick child's bedside.
>
> But just as the doctor is thought of first in illness, he is thought of last after the patient has recovered. Doctor bills are postponed to the last. In no profession or business is the amount of unpaid bills as great as in the medical profession. It is not surprising that a doctor now and then scorns a call from a family he has down on his list as "dead beats."
>
> For scorning a call from a family that had not paid him for services previously rendered, a physician was killed the other day by the irate head of this family. No doubt the slayer of the physician will try to defend his action on the ground of having been crazed by the sufferings of his child. But it will be a false defense. It was murder pure and simple. And the unreasonable attitude which the public takes toward the physician is in part responsible for it. We are too apt to forget that the doctor has rent to pay and grocer bills to meet.

OXFORD HONORS SURGEON-GENERAL GORGAS

By a peculiarly happy coincidence we are able to present, in connection with Surgeon-General Gorgas' paper, "Recommendation as to Sanitation Concerning Employees of the Mines on the Rand," facsimiles of two interesting documents. These are the copies, which Sir William Osler caused to be engrossed and illuminated on parchment, of the addresses made at Oxford when the honorary degree of Doctor of Science was conferred on Dr. Gorgas. The beautiful colors of the originals, however, must be left to the imagination. On page 1864 is a facsimile of the address of the public orator of Magdalen College, Oxford, on the presentation of Dr. Gorgas for the degree, together with an exact transcript of the translation which is engrossed on the same parchment. The latter, by the way, contains in the beautifully executed original, and hence in the transcript, a few easily recognizable typographical errors, evidently made by the artist who did the engrossing. On the opposite page is a facsimile of the address of the acting vice-chancellor, who, in admitting Surgeon-General Gorgas to the degree of Doctor of Science, addressed him as:

> Preeminently distinguished, sagacious, health-bringing, the modern Machaon of the American Army, whom indeed I should wish to salute not only in Latin prose but also in Greek verse thus:
>
> "Hail Router of the Plague of Flies! Hail Isthmian Conqueror true!
> Gorgas, to that wise Goddess dear, the Gorgon death who slew!"

There was a time, as these addresses remind us, when mighty works like those done at Panama would have been celebrated in heroic legend and epic verse; when the hero who freed one of the gateways of the world from a subtle and myriad-winged death would have been deemed to be directly inspired by the Goddess of Wisdom herself. Nay, more, his very name, as the acting vice-chancellor's charming Greek verses suggest, would have enshrined a mystery for the philologists of later days, who would have gravely shaken their puzzled heads as they endeavored to trace the undoubted connection or identity of the Isthmian Gorgas with the earlier Gorgon-slayer, the hero Perseus! To-day the "Epic of the Isthmus" waits for the poet who shall arise

> Chanting of order and right, and of foresight, warden of nations,
> Chanting of labor and craft and of wealth in the port and the garner.

Meanwhile, it is a source of national satisfaction to Americans to see the knowledge and skill that made possible the Panama Canal employed on similar tasks in Africa and honored in one of the great universities of England.

THE PSYCHOLOGY OF MARINE DISASTERS

With the great increase in size and speed of passenger steamers there has come no such diminution of risk of life as some of us perhaps anticipated. Indeed, when the carrying capacity is increased, the loss of life in each wreck or disaster is necessarily greater. Cellular sides and other ship-building safeguards are evidently no real insurance for ships against mortal injury, even when the perils of storm and speed are eliminated as they apparently were from the late St. Lawrence River disaster. Study of the personal factors in and the possible psychologic causes for these shipwrecks is therefore of chief importance. The rules of the road at sea are simple, and when two vessels, each pursuing a correct course, sight each other and a few minutes later, cut off by fog, come into collision, the inference is that some one has made a serious blunder. A wrong order or a right one misunderstood under such circumstances may have terrible consequences. Sometimes the order is unaccountably wrong, as in the case of the British battleship *Victoria* about ten years ago, but the disaster may also be the result of the careless or thoughtless misinterpretation of a correct order by the wheelsman, to whose hand the modern steering-gear so quickly and accurately responds. As the collision between the

Empress of Ireland and the collier *Storstad* occurred during a fog, the question of color-blindness does not come into consideration. It would seem that a thorough investigation by experts might reveal personal defects aside from the purely mental factor responsible for such occurrences. The question is not a new one; it has been generally and extensively discussed many times, but these repeated disasters should arouse a demand for a specific and thorough investigation of every possible factor.

Medical News

COLORADO

New Officers.—El Paso County Medical Society at Colorado Springs, May 17: president, Dr. Beverley Tucker; secretary-treasurer, Dr. Elmer L. Timmons, both of Colorado Springs.

After the Quacks.—The *Rocky Mountain News* is conducting a campaign against the quacks that infest Denver. It not only refuses their advertisements, but has been investigating their methods of doing business. As a counter proposition the quacks, it is stated, have been attempting to secure information on which to base charges of irregular practice against the members of the State Board of Medical Examiners. The plan was to hire a detective to go to the physicians of the state board soliciting treatment for diseases which he did not have. It is believed the publicity will act disastrously on the fraudulent business of the quacks. It is believed there is still room for improvement in the advertising matter carried by the *News*. The *Denver Express* has also announced its purpose to refuse medical advertisements of all kinds at the expiration of present contracts.

CONNECTICUT

Refuge for Cardiac Convalescents.—In July of last year a convalescent home was opened at Sharon, intended exclusively for patients suffering from heart disease or convalescing from acute attacks. In connection with this institution there is established a trade school for cardiac convalescents. The object of this philanthropic work is to provide an industry whereby these convalescents may earn a living, without incurring grave risk. Each workman is graded in accordance with the amount of work he may safely do, and this is increased as the crippled heart recovers. Rest rooms are provided, and there is constant medical supervision. The industry established at Sharon is the making of concrete flower-pots.

Yale Centennial.—At the commencement of Yale University, June 15-17, Yale Medical School will celebrate the one-hundredth anniversary of the first conferring of degrees. The occasion will be observed by special exercises at which addresses will be presented by Prof. William H. Howell of Johns Hopkins University and Dr. Walter R. Steiner of Hartford. On commencement day a number of honorary degrees will be conferred to commemorate the occasion. A life of Nathan Smith, one of the founders of the school, will be issued from the Yale University Press at about commencement time, and a memorial volume of medical papers, prepared under the editorship of Dr. Horst Oertel, and containing contributions from Drs. Graham Lusk, E. R. Baldwin, John Hartwell, C. W. Field, W. W. Herrick, Charles F. Craig, Samuel W. Williston and Horst Oertel, will appear as a special number of the *Archives of Internal Medicine*. It is hoped that the university will be able to announce at this time the consummation of the plan for affiliation with the New Haven Hospital and gifts to the endowment of the school.

ILLINOIS

Murdered by Non-Paying Patient.—Dr. D. Winton Dunn, formerly mayor of Duquoin, was shot six times by a coalminer, June 6, and died as a result of his wounds while being taken to a hospital in St. Louis. The murderer is said to have stated his reason for the act was he owed Dr. Dunn a bill for professional services, and that Dr. Dunn had refused to make further calls until the bill was paid.

Alumni Elect.—At the annual meeting of the Alumni Association of the Northwestern University Medical School, held in Chicago, June 8, the following officers were elected: president, Dr. Frederic A. Besley, Chicago; vice-presidents, Drs. William H. Fitch, Rockford, and Edward Von Hess, Chicago; secretary, Dr. Arthur B. Eustace (reelected); treasurer, Dr. Leo G. Gwan (reelected); and necrologist, Dr. Samuel C. Stanton.

State to Make Wassermann Test.—The governor has approved plans laid before him by Dr. C. St. Clair Drake, secretary of the State Board of Health, for the material extension of the laboratory department of the board. It is announced that the Wassermann blood-test will be made free of charge for indigent patients, and that microscopic examinations of cultures in cases of diphtheria will also be made under the same conditions.

Personal.—Dr. Lee O. Scott, Rockford, is reported to be critically ill.——Dr. Charles E. Cole, Jacksonville, sailed for Europe June 9.——Dr. Charles H. Bacon, Lockport, is reported to be critically ill in St. Joseph's Hospital, Joliet.——Drs. Frederick E. Roberg, Joliet, and Oscar T. Roberg, Chicago, have sailed for Europe, for a tour of the world.——Dr. Walter C. Jones has been reelected president, and Dr. Ernest J. Ford reelected treasurer of the Evanston Tuberculosis Institute.——Dr. Oscar P. Harris, Mendota, has opened a hospital in that city.——Dr. Gustav F. Ruediger has been elected health commissioner, and Dr. Orie C. Yoder, Peru assistant health commissioner, of La Salle.

Chicago

Memorial to Fenger.—The Danes of Chicago, at a meeting June 7, adopted a resolution endorsed by the Danish National Committee, requesting that a memorial tablet to Dr. Christian Fenger, for many years chief of the surgical staff of the Cook County Hospital, be placed in the new County Hospital.

Personal.—Dr. Lewis L. McArthur, who has been seriously ill at his home, is reported to be convalescing.——Dr. Peter S. Winner has been appointed physician of the State Penitentiary at Joliet, vice Dr. John P. Benson.——Drs. Peter J. Latz and Adolph Hartung have sailed for Europe.——Dr. Isaac J. K. Golden fractured his left arm and sustained other injuries, June 3, in a collision between his motor-car and an auto-truck.——Dr. Francis W. McNamara has been appointed county jail physician, vice Dr. Thomas J. Hogan.

KANSAS

Summer School.—The School of Medicine of the University of Kansas held its fourth annual summer school for physicians and health officers, under the auspices of the Kansas State Board of Health and the School of Medicine, at Bell Memorial Hospital, Rosedale, June 8-13, inclusive. The work of the school included clinical and laboratory work, and discussions of public health problems. Each day a round-table conference for health officers was conducted by Dr. R. J. Crumbine, secretary of the State Board of Health. The entire course was free to any licensed physician, student of medicine, or legal practitioner of the state.

MARYLAND

Anniversary of John Hopkins Hospital.—The twenty-fifth anniversary of the opening of Johns Hopkins Hospital, Baltimore, will be celebrated with appropriate exercises the first week in October. The preliminary program provides for addresses and papers by a number of well-known clinicians and teachers, as well as by graduates of the Johns Hopkins Medical School.

Personal.—Dr. Philip Briscoe, Mutual, has been elected president of the State Board of Aids and Charities. The board has named a committee to study the question of cooperative purchasing by the institutions which receive state aid, of which Dr. J. H. Mason Knox, Baltimore, is a member.——Dr. Nathan R. Gorter, the Commissioner of Health, has appointed Dr. Alexander J. Gillis assistant superintendent of Sydenham Hospital, to succeed Dr. Walter W. Point, Jr., Baltimore.——Dr. Gustav H. Woltereck has been appointed throat inspector in place of Dr. Wilbur P. Stubbs, recently named as a medical examiner of schools.——Dr. Adolf Meyer, Baltimore, has been appointed a member of the board of managers of the Maryland Training School for Girls.——Dr. Ralph R. Browning, Myersville, has been elected health officer of Frederick County, vice Dr. James M. Goodman, Frederick.——Dr. A. Lee Hichew has been appointed medical supervisor of the Franklin Square Hospital, Baltimore, to succeed Dr. G. S. La Wall.

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MASSACHUSETTS

Trachoma in Boston.—Two steerage passengers suffering from trachoma were found on the steamship *Caledonia* which arrived in Boston from Manchester, May 28, and three passengers with the same disease were found on the steamship *Michigan* which arrived at Boston from Liverpool on the same day. All the afflicted passengers were Syrians.

Tufts Alumni Elect.—At the twenty-first annual meeting and banquet of the Alumni Association of Tufts Medical School, Boston, the dean, Dr. Charles F. Painter, was the guest of honor and principal speaker. The following officers were elected: president, Dr. Herbert A. Donnell, Medford; vice-presidents, Drs. Bessie D. Davis, Cambridge, Russell B. Sprague, Boston, Anna O. Sullivan, and Isador H. Coriat, Boston; secretary, Dr. Andrew P. Cornwall, Boston, and treasurer, Dr. James F. Coupal, Boston.

MICHIGAN

New Officers.—Detroit Oto-Laryngological Society, May 26: president, Dr. Emil Amberg; secretary-treasurer, Dr. Charles L. Chambers.

Automobile Manufacturer to Build Hospital.—In a letter to the directors of the Detroit General Hospital, Henry Ford announces his willingness to take over the property on West Grand Boulevard, to complete the work, and to provide Detroit with a first-class hospital. This entails an expenditure of $3,000,000, and Mr. Ford agrees to repay every subscription that has been made toward the building fund of the hospital.

Half a Million for Hospital.—On May 18, in the presence of the members of the medical fraternity and the board of directors of the Union Benevolent Association Hospital, Mr. John W. Blodgett turned the first spadeful of earth for the excavations of the new U. B. A. Hospital, the gift of Mr. Blodgett. The specifications call for a concrete building, and the contract has been awarded for $559,000, the building to be completed by December 15.

New Medical Society.—At a banquet given by the Bay County Medical Society, May 18, the first steps were taken toward the formation of the Saginaw Valley Academy of Medicine, and a committee consisting of Drs. James W. McMeckin, James D. Bruce and Henry J. Meyer, Saginaw; John W. Hauxhurst, Frank E. Ruggles and W. G. Kelley, Bay City; and Knapp, Herbert E. Randall and Robert D. Scott Flint, was appointed to work out plans for organization.

Personal.—Dr. Joseph J. Noeker, Detroit, is reported to be seriously ill with tuberculosis at his home.——Dr. Charles E. Boys, Kalamazoo, left for Europe, June 1.——Dr. James T. Case, Battle Creek, has been made a member of the X-Ray Society of Germany.——Dr. John H. Kellogg, Battle Creek, has received a gold medal and diploma from the University of Italy, Palermo.——Jackson County Medical Association gave an informal reception and supper at Jackson in honor of Dr. Nathan H. Williams, who is moving to California.——Dr. Harry W. Long, Escanaba, sails for Europe this month.

To Celebrate Semi-Centennial.—Medical men of Detroit met in the Wayne County Medical Society's banquet hall, May 19, to commemorate the half-century of professional life of Dr. Charles Douglas. Dr. J. Henry Carstens was toastmaster and speeches were given on the various phases of the personal and professional life of Dr. Douglas. Dr. Angus McLean spoke on Dr. Douglas as "The Man," Dr. Arthur D. Holmes as "The Pediatrician," Dr. John E. Clark as "The Teacher," Dr. Daniel La Ferte as "The Colleague," Dr. Eugene Smith as "The Family Doctor." Dr. N. L. Hooker responded to the toast: "Dr. Douglas and the Young Doctor," and Dr. Douglas spoke on "Our Guest, By Himself." After the banquet, Dr. Douglas was presented with a gilt-ivory clock, suitably inscribed.

NEVADA

Hospital Opens.—Mount Rose Hospital, Reno, was opened May 22. The building is well located and fully equipped, and is under the charge of Miss Higerty, formerly nurse in St. Mary's Hospital, Reno.

Personal.—Dr. and Mrs. John E. Pickard, Reno, have started for Europe.——Dr. Harry G. Knapp, Fairview, has located at Wonder.——Dr. John C. Kitchen, Aurora, has severed his relations with the Aurora Mining Company, and has been succeeded by Dr. John B. Edwards, Mason.——Dr. William N. Burdick, Goldfield, has moved to Arizona.——Dr. Ora B. Dunham, Goldfield, has moved to San Diego, Cal.——Dr. Henry D. Hargrave, Reno, has returned to his old home in Toronto, Ont.——Dr. John L. Robison, Reno, has started for Europe.

NEW YORK

New Officers.—Washington County Medical Society at Whitehall, May 20: president, Dr. Willis A. Tenney, Granville; secretary, Dr. Silas J. Banker, Fort Edward.——Saratoga Springs Medical Society at Saratoga Lake, May 23: president, Dr. Fred J. Resseguie; secretary-treasurer, Dr. Miles E. Van Aernem.

Buffalo Alumni Meet.—The thirty-ninth annual meeting of the Alumni Association of the University of Buffalo was held June 2-5. On June 2, 3 and 4, the Harrington lectures on "Recent Advances in Pathological Anatomy" were delivered by Prof. Ludwig Pick, of the University of Berlin, Germany. On June 4, the first hour was given to memorial exercises in honor of Drs. Roswell Park and Frederick C. Busch. On June 5, the commencement exercises were held.

Scarlet Fever Epidemic at Auburn.—The epidemic of scarlet fever in the Auburn prison has reached large proportions. It is said that thus far in the inspection more than 1,000 inmates have shown signs of infection. The epidemic started in the women's prison but has spread to the men's as well. There are very few ill enough to be confined to bed. The prison contains no hospital accommodations for a general epidemic and the isolation of suspects is impossible.

Personal.—Dr. Harry S. Bernstein, director of the Bender Hygienic Laboratory at Albany has been appointed pathologist and bacteriologist to the Rhode Island Board of Health and will assume his new duties September 1.——Dean Willis G. Tucker, at the annual dinner of the alumni of Albany Medical College, held May 26, was presented with a silver loving-cup in recognition of his services as registrar of the college for 32 years, from which position he retired on January 1 last.

Club House for Physicians.—The Rochester Medical Society has purchased the property at 33 Chester Street and will alter it and fit it up for a club-house. The purchase price was $35,000, of which $18,000 has already been subscribed by local practitioners. It is expected that the building will be ready by September. Dr. William B. Jones is president; Dr. Frank F. Dow, vice-president; Dr. David B. Jewett, secretary, and Dr. Wesley T. Mulligan, treasurer of the board of directors.

New York City

Personal.—Dr. Robert Abrahams has been elected president of the board of managers of the Manhattan State Hospital, Ward's Island.——Dr. Charles F. Bolduan has been appointed head of the new Bureau of Public Health Education, of the Department of Health.——Dr. L. Emmett Holt has been appointed consulting pediatrician of the Department of Health.

Baby Week Planned.—The Department of Health, with the approval of Mayor Mitchel, is laying plans to keep one week in June as "Baby Week." It is proposed during that time to interest everyone in the public and private agencies which care for babies during the summer months and are assisting in the effort to lower the infant mortality. It is pointed out that the death-rate of infants in New York City has been reduced during the last seven years from 135.8 per 1,000 to 101.9 and that a still lower rate is possible.

Annual Memorial Meeting.—The memorial meeting of the Kings County Medical Society was held at their headquarters, May 31. The roll-call of the deceased members was as follows: Drs. George R. Westbrook, Robert E. Moore, John R. Stivers, Albert T. Birdsall, George Drury, Stanley MacGillvary, George McNaughton, Eugene F. Pearce, Edward W. Carhart, Jesse W. Henry, M. J. Leland, William H. Clowminzer, James L. Watt, Henry C. Turner, Norman E. Farewell, Francis M. Burke, Francis S. Kennedy, Annie M. Brown, and Daniel W. Woolley.

Vaccination Law Upheld.—Some time since Haghard Eckerbold, a resident of the Bronx, was fined five dollars for violation of the compulsory education law, as he had refused to have his child vaccinated and the authorities would not permit the child to attend school under those circumstances. The court of apppeals has affirmed the judgment of the lower courts holding that the laws requiring vaccination as a condition of attending public schools were not so unusual or oppressive as to excuse the defendant's act. The court also referred to the fact that the United States supreme court recently held constitutional a statute compelling vaccination.

Mikveh Baths.—A conference was recently called by Dr. Sigismund S. Goldwater, Commissioner of Health, to consider the matter of the "Mikveh" baths or cleansing pools

whose regular use is required by the Jewish faith. An independent bacteriologic investigation conducted by Dr. George Mannheimer of Columbia University has shown that as at present conducted these baths are a menace to the health of those using them and points out the need of steps to render them sanitary. The problem has been presented to the Board of Authoritative Rabbis with the request that they suggest plans for making the baths sanitary to the Health Department in the near future.

New Appointments at Columbia.—The trustees of Columbia University at their meeting, June 1, appointed Dr. Warfield T. Longcope Bard, professor of the practice of medicine to succeed Dr. Theodore C. Janeway. Professor Longcope was also nominated medical director of the Presbyterian Hospital. The department of therapeutics has been merged with that of clinical medicine and Dean Samuel W. Lambert, formerly professor of therapeutics, has been appointed professor of clinical medicine. Dr. Charles C. Lieb has been appointed assistant professor of a new department of pharmacology and Dr. William Darrach has been appointed assistant professor of surgery. A gift of $2,400 from various donors has been presented for a scholarship at the College of Physicians and Surgeons in memory of the late Frank A. Hartley.

Urges Health Work on Life Insurance Companies.—At the meeting of the Association of Life Insurance presidents held in this city, June 5, Dr. Louis I. Dublin, statistician of the Metropolitan Life Insurance Company, presented figures showing that while the death-rate throughout the country has been lowered, the amount of illness has not been lessened to any appreciable degree. He estimates that the annual losses from preventable illness in the United States is $1,000,000,000 annually. The next twenty years must see our efforts directed to the control of disease and for this reason he urged the passage of a bill drafted by the state health officers at a conference in 1913 to insure complete reports of diseases. It was urged that the life insurance companies should assist by having this bill put on the statute books of the states by cooperating with committees appointed for the purpose by the American Medical Association and the American Public Health Association.

NORTH CAROLINA

Personal.—Dr. William E. Earley, Marietta, has been appointed United States Consul to Leicester, England.——Dr. Hugh E. Bowman, Biscoe, has moved to Aberdeen.

District Society Meeting.—At the semi-annual meeting of the Second District Medical Society at New Berne, N. C., May 26, Dr. William E. Warren, Winston, was reelected president, and Dr. Kemp P. B. Bonner, Morehead, secretary.

Medical School will No Longer Confer Degrees.—At the commencement of Shaw University Medical School (Leonard Medical School, Raleigh), May 13, the announcement was made that, beginning with the next session, the university would give only the first two years of the medical course and would cease to confer medical degrees.

State Association Meeting.—The sixty-first annual meeting of the Medical Society of the State of North Carolina will be held in Raleigh, June 16-18, under the presidency of Dr. J. James M. Parrott, Kinston.——The North Carolina Public Health Officers Association will hold its fourth annual meeting at Raleigh, June 15, under the presidency of Dr. J. M. Cooper, Clinton.

Hospital Notes.—Plans have been completed and construction work will shortly begin on the new Catholic hospital in Charlotte. The central portion will accommodate forty patients, but the plans call for the construction of additional units which will afford space for 100 patients.——A 10-acre site in Gastonia has been offered the directors of the recently chartered Orthopedic Hospital as a site for the proposed institution by the Rev. A. T. Lindsay, president of Linwood College, Gastonia.

OKLAHOMA

Meeting of Colored Physicians.—The Oklahoma Medical, Dental and Pharmaceutical Association, an organization of colored men, held its annual meeting at Tulsa, recently. Dr. W. B. Humphrey, Sapulpa, was elected president. The next meeting will be held in Wewoka.

Personal.—Dr. Dumont W. Howell, Nowata, who recently sustained a fracture of the thigh, is convalescent and will soon leave the hospital at Kansas City.——Dr. Franklin G. Trigg, Lovell, was assulted recently, and his left index finger bitten off.——Dr. Robert L. Rhodes, Tulsa, has been appointed physician of Tulsa County, vice Dr. James E. Webb, resigned, to become city physician of Tulsa.——Dr. Roy K. Goddard, Supply, has been appointed assistant superintendent of the Supply State Hospital.

OREGON

New Officers.—Clackamas County Medical Association at Oregon City, May 28: president, Dr. John W. Norris; secretary-treasurer, Dr. Carl H. Meissner, both of Oregon City.

Alumni Reunion.—At the alumni reunion of the University of Oregon, clinics and laboratory demonstrations were held on June 2, 3 and 4. The annual business meeting and banquet of the association were held June 2 at the Multonomah Hotel, Portland.

Personal.—Dr. David N. Roberg, Portland, as a representative of the State Board of Health, is making a study of plague conditions in the Orient.——Dr. Charles W. Tidball, Portland, has been awarded a bronze medal and $1,000 in money by the Carnegie Hero Foundation, for his rescue of a woman from drowning in Independence River, Mo., in 1911.——Dr. Thomas J. Higgins, Baker, has been appointed as a member of the State Board of Health, vice Dr. Charles J. Smith, Portland.

PENNSYLVANIA

Hospital Dedicated.—The new building of the Monongahela Memorial Hospital was dedicated, May 30, with appropriate ceremonies.

New Officers.—At the meeting of the Pittsburgh College of Physicians, held May 27, the following officers were elected: president, Dr. Thomas W. Grayson, Pittsburgh; vice-president, Dr. Dewitt B. Nettleton, Sewickley; secretary, Dr. George A. Holliday, Pittsburgh, and treasurer, Dr. Curtis C. Mechling, Pittsburgh.

Commencement Week Clinic.—The School of Medicine of the University of Pittsburgh has arranged a clinical program in connection with the exercises of commencement week. Special clinics will be held in hospitals affiliated with the university, and laboratory demonstrations in the buildings on the university campus.

Save Children's Eyes.—Under a new state law all cases of ophthalmia neonatorum must be reported to the Bureau of Health. The law requires that any midwife or nurse, or any other person having the care of an infant whose eyes become inflamed or swollen, or reddened any time after two weeks after birth, shall report the same in writing to the health authorities within six hours.

Personal.—Dr. W. Knowles Evans, Chester, has been appointed superintendent of the new Health Department, made possible by the Clark act.——Dr. George G. Gill, assistant physician at the Hillside Home, Scranton, has resigned and will practice at Butler, N. J.——Dr. Gregg A. Dillinger, Pittsburgh, has been appointed chairman of the Public Safety Committee of Council as a member of the Public Morals Bureau.——Dr. W. Knowles Evans has been elected supervisor of the Health Department of Chester.

Railroad Accidents.—The accidents division of the public service commission, issued its report for the first quarter of 1914, May 31, which shows that 262 persons were killed on the steam railroads of the state and 2,480 injured. This is a decrease of 18 in the number of fatalities compared with the same period of last year, and a decrease of 2 as to the number injured. There were 29 killed on street railways and 725 injured. Those fatally injured on the railroads were 98 employees, 2 passengers and 146 trespassers. Those killed on street railways were 4 employees, 1 passenger, 3 trespassers and 21 others.

Philadelphia

Alumni Reunion.—The annual reunion of the Alumni Society of Philadelphia of the Medical Department of the University of Pennsylvania, was held at Glenrock Park, N. J., June 4.

Alumni Elect.—At the annual meeting of the Alumni Association of the Jefferson Medical College, June 5, the following officers were elected: president, Dr. Francis T. Stewart; vice-presidents, Drs. J. Coles Brick, John H. Gibbon, E. Q. Thornton, P. Brooke Bland; corresponding secretary, Dr. Elmer H. Funk; recording secretary, Dr. Walter S. Lucas, and treasurer, Dr. Warren B. Davis, all of Philadelphia.

Model Homes.—Plans for the erection of a group of model dwellings in Kensington, were announced June 4, by the Octavia Hill Association. The new dwellings will be build of brick, two stories high and will be so arranged that families will be able to rent two rooms for $6.50, three rooms and a bath for $10 and a separate house of four rooms for $13 a month. These houses will be arranged around an area of nearly one-third of an acre, and this open space will be filled up as a playground.

College Commencements.—The sixty-second annual commencement of the Women's Medical College of Pennsylvania was held June 2, eighteen women receiving the degree of Doctor of Medicine.——The thirty-fourth annual commencement of the Medico-Chirurgical College was held June 5, and seventy-five men received the degree of Doctor of Medicine.——The eighty-ninth annual commencement of Jefferson Medical College was held at the Academy of Music, June 6, when 147 men received the degree of Doctor of Medicine.

Personal.—Dr. Henry W. Rihl celebrated his 91st birthday anniversary at his home in Germantown, June 2.——Dr. S. W. Newmayer has been appointed assistant to the chief medical inspector of the Department of Health, to succeed Dr. Charles A. Groff, resigned.——Dr. James M. Anders has been appointed a member of the Board of Health of Philadelphia, to succeed Dr. Charles H. Andrus, Chestnut Hill.——Drs. William H. Walsh and Leonard D. Frescoln have qualified for the $4,000 post of resident physician of the Philadelphia General Hospital.

Alumnae Association Meeting.—The thirty-ninth annual meeting of the Alumnae Association of the Women's Medical College of Pennsylvania, was held June 2. Dr. Elizabeth L. Peck was elected president, Drs. Marie L. Bauer and Frances C. Vangaskin were elected vice-presidents, and the following officers were reelected: Dr. Jacobina S. Reddie, recording secretary; Dr. Mary Buchanan, corresponding secretary, and Dr. Ella C. Potter, treasurer. Announcement was made of a number of special gifts to the college, including a fellowship fund of $500 to be awarded annually for postgraduate work to a student showing special ability in teaching. The reception and banquet were held at the Bellevue Stratford in the evening.

Babies Emergency Bureau.—A central bureau has been established at City Hall by the Public Health Association, which affords advice, aid and directs personal relief to all mothers who wish to call on it. If the baby is sick, if it needs physician's attention, if a trained nurse's services are required, the mother has only to call up Electrical Bureau, 91, day or night and consult the child experts in charge. The office is in Room 714 of City Hall, and Miss Gertrude Rhoads is the executive secretary. Every nurse, every dispensary, every asylum, every hospital, every charity and welfare association in the city that has anything to do with babies, even clubs, churches, insurance companies have banded together in the Babies' Welfare Association, and place their resources at its command.

TENNESSEE

Hospital Opens.—The new Children's Hospital, on the grounds of the City Hospital, Memphis, which was recently built at a cost of $15,000, was formally opened for a public reception, May 25.

New Officers of State Board.—Dr. Rufus E. Fort, Nashville, was reelected president, and Dr. Andrew M. Gamble, Maryville, was elected vice-president of the board, which also elected Dr. Vincent A. Biggs, Martin, a member of the State Board of Embalmers.

Personal.—Dr. J. McChesney Hogshead has been appointed chief of staff of Erlanger Hospital, Chattanooga, succeeding Dr. John S. Dye.——Dr. Robert Mann, Memphis, who was stricken with appendicitis while operating for that condition in the Baptist Memorial Hospital recently, is making good progress toward recovery.

Tropical Dysentery.—Ten patients in three families at Erlanger, Chattanooga, suffered from a form of dysentery which was found after considerable investigation to be due to the bacillus of Shiga. This infection is unusual in this climate but is frequent in tropical countries and is fatal in from 7 to 20 per cent. of cases. The diagnosis was confirmed by experts.

New Officers.—East Tennessee Medical Association at Harriman, May 21 and 22: president, Dr. George P. Zirkle, Kingston; secretary-treasurer, Dr. Hiller P. Larimore, Chattanooga (reelected). The next semi-annual meeting will be held at Rogersville, and the annual meeting in Athens in May of next year.——Middle Tennessee Medical Association at Bellbuckle, May 22: president, Dr. Otey J. Porter, Columbia; secretary-treasurer, Dr. Roy W. Billington, Nashville.

VIRGINIA

State Sanatorium Completed.—The State Board of Health announces that the new infirmary building at Catawba has been completed and occupied, and that from now on the board will be able to admit suitable cases to the sanatorium without delay.

Northern Neck Physicians Meet.—At the semi-annual meeting of the Medical Association of the Northern Neck, held at Heathsville, May 28, Dr. Robert E. Booker, Lottsburg, was elected president; Dr. Stonewall Rice, Heathsville, vice-president; and Dr. Robert O. Lyell, Warsaw, secretary and treasurer.

Personal.—The address to the graduating class of the Medical College of Virginia was delivered by Dr. John A. Ferrall, secretary of the North Carolina State Medical Society, on "Health Work as a Career."——Dr. Southgate Leigh, Norfolk, has been appointed a member of the Virginia State Board of Medical Examiners, vice Dr. Herbert Old, removed to Philadelphia.——Dr. J. Allison Hodges, Richmond, delivered the address to the graduating class of the Louisburg, N. C., Female College, May 28. The subject of the address was "Conservation of Nerves."——Dr. A. S. Priddy, Lynchburg, president of the State Epileptic Colony, has been elected president of the National Association for the Care, Study and Treatment of Epilepsy.

The Problem of the Feeble-Minded.—Plans to investigate the feeble-minded in the State of Virginia, authorized by the last General Assembly, were discussed by the State Board of Charities and Corrections at its meeting, May 14. The legislative appropriation provides $3,000 for two years, and the board is directed fully to investigate, determine plans for remedy, and to report to the next General Assembly. The investigation will first deal with feeble mentality and the criminal population, to establish the relation between criminality and feeble-mindedness; it will then turn on feeble-mindedness in the community, and will finally take up the solution of the problem either by segregation or by confinement in institutions.

GENERAL NEWS

Pennsylvania Alumni Smoker.—The Society of the Alumni of the Medical Department of the University of Pennsylvania announces that the smoker will be held in the Rathskeller of the Hotel Alamac, Atlantic City, on the evening of June 23.

Indian Service Physicians' Conference.—The Commissioners of the Indian Service of the Department of the Interior have called a conference of physicians in the Indian Service. It will be held at the Lapwai (Idaho) Indian Sanatorium, June 23-25, and disease conditions among Indians will be discussed.

Clinical Day for Orthopedists.—Clinical Day for the twenty-eighth annual meeting of the American Orthopedic Association will be held in Philadelphia, June 17, at the hospital of the University of Pennsylvania. Clinics will be given in the morning and afternoon, luncheon will be served at Houston Hall, and in the evening there will be a boat-ride on the Delaware River and supper at the Yacht Club.

Leper in Washington.—John R. Early, about whose status as a leper medical experts have disagreed for five years, and who escaped from the Djamond Head Leper Station near Port Townsend, Wash., May 18, was discovered at a fashionable hotel in Washington, June 2, and was returned to his old place of isolation near the city limits. The federal health authorities have asked the Honolulu Board of Health for permission to send Early to Molokai.

New England Alumni of Jefferson Medical College Meet.—The New England Association of Jefferson Medical College Alumni held its annual meeting in Boston, May 28, and elected the following officers: president, Dr. Patrick F. Gahan, Medford, Mass.; vice-president, Dr. Thomas J. Fitzmaurice, Bangor, Me.; secretary, Dr. Wallace P. MacCallum, Boston; and treasurer, Dr. Frank I. Payne, Westerly, R. I. It was voted to hold the next meeting in Providence.

Virginia and District Doctors Meet.—The annual meeting of the Medical Society of Northern Virginia and the District

of Columbia was held in Manassas, Va., May 20. The following officers were elected: president, Dr. William P. Carr, Washington; vice-presidents, Drs. John D. Thomas, Washington, and William F. Merchant, Manassas; recording secretary, Dr. Thomas A. Groover, Washington; corresponding secretary, Dr. Joseph D. Rogers, Washington; and treasurer, Dr. William I. Robey, Herndon.

Glanders Vaccine not Effective.—As a result of extensive experiments with horses and other animals the experts of the Bureau of Animal Industry, Department of Agriculture, have reached the conclusion that mallein is not effective in the treatment of glanders. Its only value is as a diagnostic agent. Efforts to immunize animals with glanders vaccine were unsuccessful, and it is believed that the only way of eradicating glanders is to eliminate all animals showing signs of the disease, as has been the practice heretofore.

Railway Surgeons Meeting.—At the meeting of the Pennsylvania Railway Surgeons' Association, Lines East and West, at Atlantic City, June 19 and 20, one of the chief features of the meeting will be an illustrated address by Mr. T. H. Carrow, representative of Superintendent Newbern of the Insurance Department, on the "Preventative Function of the Company Surgeon in Railway Safety," based on the records of accident statistics of the Olean yards as compared with the Buffalo and other railway yards of similar size and type.

Academy of Medicine Meeting.—The thirty-ninth annual meeting of the American Academy of Medicine will be held in Atlantic City, June 19-22, under the presidency of Dr. John L. Heffron, Syracuse, N. Y. Chief among the topics for discussion will be "The Practice of Medicine and Industries, Considered Under the Heads of Menace to Health and Remediable and Preventive Measures." The president's address will be on "Modern Medicine and Social Problems," and the annual address by Oscar Riddle, Ph.D., of the Carnegie Institute, is to be on "Biologic Basis and Experimental Control of Sex."

Army Medical School Graduation.—The graduation exercises of the class of 1914 of the Army Medical School were held June 1, when a class of seventeen was graduated. An address was delivered by Lieut. Henry C. Coe, New York City, M.R.C., U. S. Army, and the diplomas were presented by Surgeon-General William C. Gorgas. The Hoff Memorial Medal was presented to Lieut. Charles L. Gandy, M.R.C., U. S. Army, by Col. John Van R. Hoff, M.R.C., U. S. Army, and the Sternberg Medal was presented to Lieut. Alexander W. Williams, M.R.C., U. S. Army by Lieut. Richard Slee, M.R.C., U. S. Army, Swiftwater, Pa.

Annual Meeting of Maryland Alumni.—The meeting of the Alumni Association of the University of Maryland School of Medicine was held May 30. The following officers were elected: president, Dr. James T. Jarrett, Portsmouth, Arthur M. Shipley, Baltimore, and J. Charles MacGill, Catonsville; recording secretary, Dr. Albert H. Carroll, Baltimore; assistant recording secretary, Dr. Walter F. Sowers, Baltimore; corresponding secretary, Dr. Howard W. Jones, Baltimore, and treasurer, Dr. John Houff, Baltimore. The address of the evening was made by Rev. H. M. Lichtliter on "Some By-Products of Medical Science."

Tropical Medical Men Meet.—The eleventh annual meeting of the American Society of Tropical Medicine was held at Harvard Medical School, Boston, May 29 and 30. The following officers were elected: president, Capt. Charles F. Craig, M.C., U. S. Army; vice-presidents, Dr. Milton J. Rosenau, Boston, and Maj. Bailey K. Ashford, M.C., U. S. Army; secretary, Dr. John M. Swan, Rochester, N. Y.; assistant-secretary, Dr. Allen J. Smith, Philadelphia; delegate to the Executive Council of the Congress of American Physicians and Surgeons, Surg.-Gen. William C. Gorgas, M.C., U. S. Army; alternate, Capt. Joseph F. Siler, M.C., U. S. Army. The next meeting will probably be held in San Francisco.

Civil Service Examinations.—The United States Civil Service Commission announces an open competitive examination for assistant epidemiologist, for men only. The salaries of this position range from $2,000 to $2,500. The duties are to conduct laboratory studies of diseases, to determine the cause of epidemics and to recommend measures to control the diseases. Applicants must be between 23 and 40 years of age, and must have had an education equivalent to that of a medical school or college of recognized standing, at least three years' experience in epidemiologic work under federal, state, or local authorities, and be experienced in laboratory technic, especially in regard to typhoid fever. Application should be made to the United Civil Service Commission, Washington, D. C., and applicant should ask for form 304, giving the exact title, of the examination required, namely, "Assistant Epidemiologist, Male ($2,000-$2,500)."

The United States Civil Service Commission announces an open competitive examination for bacteriologist, for men only, to be held July 8, to fill vacancies. The salaries range from $1,200 to $2,000, and the positions are in the Bureau of Chemistry, Department of Agriculture. The applicant must be between 21 and 40 years of age, and must have an education equivalent to a Bachelor's degree or the degree of M.D. from a college of recognized standing, and must have had at least two years' training in bacteriology. Persons who desire to take the examinations should apply to the United States Civil Service Commission, Washington, D. C., giving the exact title of the examination desired, namely: "Bacteriologist (Male)."

Bequests and Donations.—The following bequests and donations have recently been announced:

Foundling Hospital and St. Vincent's Hospital, New York City, each $2,160 as residuary legatees of the estate of Miss Mary Guerin.

House of St. Giles the Cripple and Brooklyn Eye and Ear Hospital, each $2,500, by the will of Carl H. De Silver.

Home for Destitute Crippled Children and Foundlings' Home, Chicago, each $10,000, by the will of Henry M. Hooker.

Associated Jewish Charities, Chicago, $5,000; Michael Reese Hospital, $2,000; Home for Destitute Crippled Children, $1,000, by the will of Nathan Friend.

Methodist Hospital, Philadelphia, Pottsville, Pa., Hospital, each $50,000; Bryn Mawr, Pa., Hospital, $5,000; Institution for the Deaf and Dumb, Mt. Airy, Polyclinic Hospital and College for Graduates in Medicine, Philadelphia, Epileptic Hospital, Christ Church Hospital, Philadelphia Lying-In Hospital and Training School, Seaside Home for Invalid Women, Atlantic City, N. J., Children's Seashore House, Atlantic City, N. J., Women's Medical College, Rush Hospital for Consumption, German Hospital, American Oconologic Hospital, Chestnut Hill Hospital, each $10,000; for an endowment of a scholarship at the University of Pennsylvania, St. Christopher's Hospital for Children, Howard Hospital, Infirmary for Incurables, Kensington Hospital, Friends' Asylum for the Insane, Frankford Street, St. Agnes' Hospital, West Philadelphia Hospital, Woman's Hospital and Dispensary, Philadelphia Home for Incurables, Philadelphia College of Physicians, Home of the Merciful Savior for Crippled Children, Philadelphia Branch of the School for the Feeble-Minded in Memory of Dr. Jacob Mendes Da Costa, Orthopedic Hospital, and Episcopal Hospital, each $5,000 by the will of Miss Elizabeth Swift Shippen; one-fifth of the residuary estate to the Pottsville, Pa., Hospital and Eighth Street Branch of the Pennsylvania Hospital for Cases Thought Incurable.

Adirondack Cottage Sanitarium, one-twelfth; Presbyterian Hospital, one-twelfth; St. Luke's Hospital, one-thirtieth; Charity Organization Society, three-twentieths; Manhattan Eye, Ear and Throat Infirmary, one-thirtieth; Society for the Relief of the Destitute Blind, one-thirtieth; Home for Incurables, one-tenth; State Charitable Aid Association, one-thirtieth, from the estate of William Hale Penfold, appraised at $995,000, after the death of Edmund Penfold.

Dr. Edward L. Trudeau, Saranac Lake, N. Y., $10,000, by the will of William Hale Penfold.

Stanford University Medical School, $10,000, by the will of Charles G. Latrop.

Deaths Proved Not Due to Antityphoid Vaccine.—Dr. S. S. Goldwater, Commissioner of Health of New York City, has rendered a great service to medicine and the public by causing an investigation of deaths and severe illness reported in the newspapers as due to antityphoid vaccine. According to newspaper statements, Clarence E. Pantzer, a private in the National Guard of Brooklyn, died as a result of injection of antityphoid vaccine. The Army surgeons who made the inoculation claimed that the death was not due to this cause. After a protracted dispute, in which Health Commissioner Goldwater recalled a burial permit previously issued, an autopsy was performed under the direction of the coroner, which showed that death was caused by malignant endocarditis. No evidence of typhoid fever could be found in the post-mortem examination. In another instance, two children were inoculated with the vaccine, at the request of their father who was at the time sick with typhoid. Marked and severe symptoms later occurred, which were immediately credited to the injection of the vaccine, and the statement was made that the children were suffering from blood poisoning. Thus, the following statement appeared in a number of newspapers simultaneously:

> While militiamen in many states of the west are being immunized against typhoid fever, two children in New York are near death as a result of typhoid serum injections. Their mother, brother, and aunt are recovering from an attempt to immunize them.

In this instance, as well, Dr. Goldwater ordered a thorough investigation, and it has now been shown definitely that both children are suffering from typhoid contracted, without any doubt, prior to the administration of the vaccine. In one

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case, owing to the pressure of an accumulation of cerebrospinal fluid, the disease closely resembled the epidemic form of meningitis; thus confusing still further the symptoms and making very difficult the diagnosis. In speaking of these cases, Deputy Commissioner Emerson emphasized the fact that typhoid vaccinations were both harmless and efficacious. "According to the department's records most of the secondary or direct contact cases become infected while the physician is waiting for more definite symptoms in the original case. In the presence of any illness, even remotely suspected of being typhoid fever, prompt immunization of every member of the family is of great advantage. Those who develop the disease after immunization invariably show evidence of having contracted the infection before the immunizing injection."

FOREIGN

Personal.—Two suffragists, June 3, waylaid and attacked Dr. W. A. Foreward, deputy-governor of Holloway Gaol, London, in charge of the medical work at the prison.—— Sir William Osler, regius professor of medicine at Oxford University, has been elected foreign associate of the Paris Academy of Medicine.

Deaths Abroad.—The following deaths have recently been announced from abroad: Sir Francis Henry Laking, M.D., Heidelberg, 1869; M.R.C.P., London, 1872; Grand Commander of the Victorian Order; Commander of the Bath; Apothecary to His Majesty's household; physician-in-ordinary and surgeon-apothecary to King George V, and to the Prince of Wales; died at his home in London, May 28, aged 67.——G. Antonelli, professor of anatomy at Naples.

Hygiene and the Red Cross at the Swiss National Exhibition, Berne.—The Hygiene and Red Cross sections of the Swiss National Exhibition in Berne, which opened on May 15 and which will last until October 15 next, are of interest. The exhibition has been partly arranged by the Swiss hospitals. The Swiss Health Office shows its methods of testing food with a view to preventing adulteration and also its methods of inspecting slaughterhouses, and space is devoted to the work of the Red Cross and Ambulances Associations.

The period of the exhibition has also been chosen by a number of congresses and conferences, both national and international, as an opportune moment for a meeting. The Swiss Society of Neurology, for instance, called an International Congress of Neurology, Psychiatry and Psychology to be held at Berne from September 7 to 12 next. An organization committee and various international committees have been appointed.

CANADA

Hospital News.—Dr. Harry Morrell, Regina, has been appointed director of the pathologic laboratory of the Regina General Hospital, with Dr. Seymour Ross as assistant.—— It is expected that the new Regina Isolation Hospital in connection with the General Hospital of that city, will be ready for the reception of patients on August 15. ——The Regina General Hospital is building a nurses' home at a cost of $125,000.——A site of 230 acres has been acquired for the Saskatchewan sanatorium for tuberculosis at Ft. Qu'Appelle, and construction work on the buildings has been recommenced.

McGill University News.—At the recent meeting of the Board of Governors the resignations were accepted of Drs. Walton, Howard T. Barnes and R. H. Miller. Dean Walton has accepted a position with the Egyptian Government at Cairo; Dr. Barnes will take up the duties of professor of physics in the new University of British Columbia; Dr. Miller will go to the Western University, London, Ontario. ——Mr. G. R. Mines, M.A., has been appointed to the Joseph Morley Drake chair of physiology; Dr. Douglas McIntosh to be professor of physical chemistry; Dr. J. W. Tait to be assistant professor of psychology; Dr. F. M. G. Johnston, associate professor of chemistry; Dr. R. V. Krieble, assistant professor of chemistry. In the faculty of medicine, Dr. L. J. Rhea has been appointed associate professor of pathology; Dr. C. K. Russel, lecturer in neurology; Dr. A. Freedman, assistant in anatomy; Dr. Maude E. Abbott, lecturer in pathology; Drs. H. B. Cushing and C. A. Peters, lecturers in medicine and clinical medicine; Dr. E. M. von Eberts, lecturer in surgery and clinical surgery; Dr. H. C. Burgess, lecturer in gynecology. Dr. J. J. Ower was appointed to the fellowship in pathology maintained by Dr. James Douglas, New York, one of the governors of the university, and Dr. R. H. Malone to the studentship in the same subject, also maintained by Dr. Douglas.

LONDON LETTER

LONDON, May 22, 1914.

Imperial Health Conference

The Imperial Health Conference, organized by the Victoria League for the promotion of knowledge of house and town planning and the care of child life throughout the empire, was opened at the Imperial Institute by Mr. Lewis Harcourt, secretary of state for the colonies. About 300 delegates, representing the governments of the various colonies, as well as local authorities and organizations throughout the United Kingdom, were present. In his address Mr. Harcourt said that the great difficulty which confronted the work of housing reform in this country was the congestion of population in the hearts of the towns. The last word in town-planning rested with Australia, which was entering on the building of a federal capital. It was their boast that during the past nine years the rates of West African invalidity had been reduced from 56 to 25 per thousand. The conference adjourned for the purpose of attending the opening of the Victoria League health exhibition, which was also held in the Imperial Institute. It embraced two classes of exhibits. One dealt with town planning, which was illustrated by plans and photographs of various garden city and housing schemes relating to the United Kingdom and many of the oversea dominions. The other section dealt with the welfare of children from babyhood to maturity, illustrated by exhibits relating to the treatment of children in all parts of the empire, in health and sickness, at work, at school, at play and asleep.

Royal Commission on Venereal Diseases

At the thirty-third meeting of the Royal Commission on Venereal Diseases, evidence was given by Sir Herbert Smalley, M.D., one of the commissioners of prisons. He said that it was his firm impression, and also that of many of the senior medical officers of prisons, that venereal diseases were less prevalent in prisons than thirty and even twenty years ago, and that the cases were less severe in character. He was inclined to think, however, that the later stages of syphilis affecting the circulatory and nervous systems were more prevalent. Under 2 per cent. of prisoners presented manifest symptoms of either gonorrhea or syphilis. The highest incidence occurred among prisoners committed from large towns and manufacturing or mining districts, and cases of venereal disease were disproportionately numerous in prisons receiving prisoners from seaport towns. About half of those suffering from venereal disease were still in an infectious condition when discharged. This problem might be attacked either by detention, notification or by the provision of facilities for treatment subsequent to discharge. The first alternative was of doubtful expediency, and any form of notification other than that which was made applicable to the whole community would be inadvisable. The idea of a prisoner being specially penalized or of his sentence being enhanced on account of venereal disease would, he thought, be strenuously resisted. He was not in favor of venereal disease being made notifiable generally throughout the community. The provision of facilities for treatment seemed to offer a more hopeful solution. Means should be provided throughout the country for treatment of venereal disease free of cost, readily accessible, and with attendance permissible in the evening so as not to interfere with the daily work of the patient. As far as possible these centers should be at general hospitals and dispensaries rather than at special hospitals or centers solely for the treatment of venereal diseases. If such centers were organized it would enable a prison doctor to give a discharged prisoner a ticket, the presentation of which at a center would secure the patient a continuance of treatment. The fact of the patient being recently discharged from prison should be a confidential matter and should be made known at the treatment center to as few persons as possible. In convict prisons out of 1,755 male convicts 299, or 17 per cent., showed signs of having had syphilis.

Government Report on Sleeping-Sickness

The report on sleeping-sickness has been issued by the Interdepartmental Committee, which has been investigating the part played by wild animals and the tsetse-fly in Africa in the spread of the disease and has been considering whether or not it is advisable to attempt the extermination of wild animals, either generally or in a special area, and whether or not any other measures should be taken to check the

disease. The committee finds that there are two distinct forms of sleeping-sickness. There is the Uganda form, which appears to be a new disease, and was first recognized in 1901. It is violently epidemic, and is estimated to have caused 200,000 deaths between 1898 and 1906. On the other hand, there is the sleeping-sickness of Nyasaland and Rhodesia. This has been recognized as a distinct form of the disease only since 1908. It is almost certainly not epidemic. The total number of cases which a vigorous search has been able to discover is 153 in Nyasaland and 107 in Rhodesia from 1908 to 1914. It is said that the natives recognize this as an old disease. Though much less widespread than the Uganda disease, the sleeping-sickness of Nyasaland and Rhodesia is far more deadly. Death usually results in from three to six months after the appearance of the symptoms. Hitherto no treatment has been successful, and the disease may be regarded as almost invariably fatal. The Uganda form, on the other hand, is much more prolonged. Even untreated cases usually last from eighteen months to two years. If the patient is treated at an early stage life is often prolonged for years, and there are many cases of apparent recovery. The tsetse-fly has in each case proved to be the carrier of the disease; but it has also been proved that Uganda sleeping-sickness is caused by a different species of the tsetse-fly from that which carries the Rhodesian or Nyasaland form. The *Glossina palpalis*, which carries the Uganda disease, never goes far from water, and is altogether unknown in those parts of Nyasaland and Rhodesia where the other form of the disease occurs. It is now proved almost beyond doubt that the carrier in this case is *Glossina morsitans*. Its distribution is capricious and it seems to be independent of water. Its migrations are not understood, and its length of flight in search of food is unknown. As to the part played by wild animals in the distribution of sleeping-sickness, there appears to be little doubt that in the case of the Uganda form it is of minor importance as compared with that played by man himself as a reservoir from which the fly derives the infection. In the case of the Rhodesian or Nyasaland form there is much disagreement between the authorities, and the committee comes to the conclusion that the evidence is conflicting as to whether the wild animals which are a reservoir of the disease affecting domestic stock are a danger to man.

Tuberculosis in London

The London County Council has for some time been preparing a scheme for dealing with tuberculosis in the metropolis. This has now been completed and adopted. There will be a complete network of tuberculosis dispensaries at which treatment will be provided by the local sanitary authorities. For their upkeep the council will contribute so far as uninsured persons are concerned grants not exceeding 50 per cent. (provision for insured tuberculous persons has been made under the national insurance act, as reported in previous letters to THE JOURNAL). The dispensaries will be linked up with the hospitals. Arrangements will be made for residential treatment both in hospitals and sanatoriums. An advisory board representing hospitals, dispensaries and sanatoriums will assist in insuring some uniformity of standard in the selection of patients. Recommendations for residential treatment will be received from local medical officers of health. If, however, there appears to be any doubt as to the suitability of the case, it will be submitted to a rota of physicians to be selected by the advisory board. When a patient leaves the residential institution to which he has been sent by the council, arrangements will be made for the local dispensary or other suitable agency to continue his treatment. As a condition of receiving residential treatment, the patient undertakes to remain under medical supervision on his discharge. The committee is of opinion that by the end of the current financial year 160 beds will be required in hospitals and 240 beds in sanatoriums for adults, and 150 beds in residential institutions for children. The London Insurance Committee has obtained the accommodation which it requires at a price not exceeding $7.50 a week for each bed, and it will be possible for the council to obtain beds at ten hospitals and four sanatoriums on these conditions. Many more beds, however, will be necessary and the Asylums Board is to be asked to provide 150 beds. In the case of children the weekly charge for each bed should not exceed $5. The cost of the scheme for the present financial year is put at $144,605, toward which the government would contribute $61,250, and at $200,000 for 1915-1916, to which the government would contribute $100,000.

PARIS LETTER

PARIS, May 22, 1914.

Personal

The Académie de médecine, at its session May 19, elected Charles Eduard Hédon, professor of physiology at the Faculté de médecine of Montpellier, and Charles Nicolle, director of the Pasteur Institute of Tunis, as national correspondents. Dr. Hédon is known especially for his experimental research work in pancreatic diabetes and has published a "Précis de physiologie." Dr. Charles Nicolle last year, in collaboration with Dr. Blaizot, introduced an atoxic antigonococcic vaccine (THE JOURNAL, Nov. 15, 1913, p. 1825).

Dr. Bosc, professor of pathologic anatomy at the Faculté de médecine de Montpellier, has just been appointed professor of pathology and general therapeutics at that school.

Dr. Etienne, professor of general and internal pathology at the Faculté de médecine de Nancy, has just been appointed professor of medical clinics at that school.

Physicians Elected Deputies

Fifty-five physicians have just been elected deputies, the same number as in 1910. Of these, thirty-seven were re-elected. It is an interesting fact that the three deputies from the department of Tarn-et-Garonne are all physicians.

The Plague at Senegal

The governor general of French West Africa has notified the Minister of the Colonies that seven cases of plague were reported, May 13, in a native village at some distance from Dakar. No new case has since developed.

General Anaphylaxis

Anaphylaxis has been conceded, hitherto, to be specific, in the sense that the substance used to produce anaphylactic shock must be identical with the sensitizing substance. Such a narrow specificity has been observed in certain cases that an animal which had been sensitized with goat's milk did not react to cow's milk, and that a guinea-pig which had been inoculated with rabbit-serum did not react to horse-serum, and vice versa. It appears from a series of experiments which Prof. Charles Richet has just reported to the Académie des Sciences that anaphylaxis need not be specific; animals which had been given non-fatal and (in appearance, at least) innocuous doses of phosphorus showed themselves susceptible to chloroform, just as animals did which had been chloroformed a month before. Richet concludes that, besides the specific anaphylaxis, a general anaphylaxis exists which is derived from indirect anaphylaxis (THE JOURNAL, Feb. 28, 1914, p. 711). The organism may, therefore, through one poison, be sensitized to quite different poisons.

Surgery for Diabetics

At the session of the Académie de médecine, May 19, Dr. Marcel Labbé, *agrégé* professor at the Faculté de médecine de Paris showed that the danger in operations on diabetics could be traced to two principal causes: hyperglycemia and acidosis, without considering vascular lesions which do not properly belong to diabetes. Hyperglycemia favors suppuration, but is far from being fatal in aseptic operations. It is well to combat hyperglycemia by a diet before operation.

Labbé deduces the following practical rules: Only imperative operations should be performed on diabetics; by preliminary treatment, glycemia, and acidosis should be reduced; a mixed diet of carbohydrates may be employed in the case of non-emaciated diabetics; a diet of dried vegetables, oats, or milk, with an alkaline treatment, may be given diabetics with acidosis. Before the operation 40 gm. of sodium bicarbonate should be administered. For the anesthetic the preference should be given to local or general anesthesia by ethyl chlorid. After the operation large doses of sodium bicarbonate should be administered orally or subcutaneously; then, when able to take food, the patient should be given vegetables, and oat or milk broths.

Refrigeration in the Hospitals of Paris

Dr. Lortat-Jacob has just reported the results of his inquiry into the use of refrigeration in the hospitals of Paris. With the exception of the Cochin hospital, the Hôpital de la Pitié and the military hospital at Val-de-Grâce, all the hospitals of Paris lack refrigeration facilities for the preservation of provisions and bodies. During the summer, more than 1,000 quarts of milk are lost each day in certain hospitals of Paris for lack of a suitable refrigerating plant.

BUDAPEST LETTER

BUDAPEST, May 11, 1914.

Increase of Length of Life of Hungarian Women

The detailed statistical results of the last census, published at the end of last month, have been discussed by various medical men from different points of view. A noted gynecologist has examined the data available for comparing the duration of life between men and women, and concludes that women live longer than men. The average lifetime of the Hungarian women, according to the census taken in 1880, was 42.5 years, but according to the last census it is now 51 years. In some parts of Hungary the improvement is still greater. For instance, in the Székely district in Transsylvania the average is 59.2 years. According to this gynecologist the longevity of women is due to the fact that women work less than men. The data of the present census show that there are fewer hysteric and nervous women than in former years. Insanity has also decreased slightly. These favorable results are for the most part due to the general prosperity of the country. Wages in Hungary have been almost doubled during the last ten or twenty years by the increase in agriculture, trade and manufacturing.

Near-Sightedness in Schoolchildren

Dr. Bogdan, in his account of the examination of two hundred text-books from a sanitary point of view, draws particular attention to the fact, already established by many prominent investigators, that near-sightedness in children either originates or develops in connection with the schoolroom. The chief cause is the too prolonged reading, writing and drawing in which visual accommodation, as well as convergence, is greatly fatigued. Undue strain of the muscles of accommodation causes an active hyperemia; the venous circulation is hindered, there is an increase in the intra-ocular pressure and the sclerotic is gradually stretched. Too strong convergence works even greater harm. It is, of course, understood that in some children near-sightedness is hereditary, and as a result, they become affected more quickly than their healthier comrades. In addition, near-sightedness may be the result of insufficient light and improper equipment in desks and other school furniture.

Dr. Bogdan insists that the paper used in the text-books should not have a glossy surface. Under artificial light a glossy surface causes improper focusing of the eye and necessitates frequent changes in the position of the book as well as of the head. The paper should be thick enough to prevent the printing on one page from penetrating to another. A few authorities have recommended yellow paper, but the majority favor white paper, which gives a better contrast between the printed matter and the background.

Effects of Tobacco-Smoking

In a recent meeting of the Medical Society, Dr. Pekanovits read a paper on this subject. He stated that tobacco-smoke contained nicotanin, collidin and other pyridin derivatives, such as acids, resins, carbon dioxid, hydrocyanic acid and ammoniacal salts, as well as the nicotin. Two drops of nicotin placed on a dog's tongue produced great weakness, convulsions and death in less than a minute; eight drops were sufficient to kill a horse. Tobacco contained from 2 to 8 per cent. nicotin, and M. le Bon, a French investigator, had determined that although this was changed in smoking, still it was converted into other pyridin products, which were just as poisonous. Dr. Pekanovits found that the bodies did not condense to any appreciable extent in the mouth, and were for the most part exhaled, so that the physiologic effect of ordinary smoking was nil. Susceptible persons, however, might be affected by breathing the air in which there was much tobacco-smoke.

The action of nicotin has been shown by the investigations of Petit to be intermediate between that of bromids and that of digitalis. It soothes the nervous system, but causes a powerful and rapid contraction of the vessels and a rise in blood-pressure. One of its best-known dangers is angina pectoris, caused, perhaps, by the severe contractions of the coronary arteries. Prolonged use induces the development of arteriosclerosis. Tobacco is a "habit-drug" like opium, cocain and alcohol; its devotee, although he is aware of its harm, loses the force of will necessary to break the habit. Tobacco-smoke has apparently no bactericidal action on any micro-organisms present in the lungs. One of the first effects of an overdose is nausea. Prolonged smoking is a distinct factor in the production of digestive troubles.

Marriages

FRANK J. ERDLITZ, M.D., Johannesburg, Mich., to Miss Matilda La Rivere of Manistee, Mich., at Grayling, Mich., May 20.

LOUIS RAYMOND BURNETT, M.D., Cambridge, Mass., to Miss Isabel Knowlton Thomas, Milton, Mass., recently.

GAYLORD EUGENE PITTS, M.D., Mount Horeb, Wis., to Miss Agnes Helene Dahle of Minneapolis, May 28.

WILLIAM A. GARDNER, M.D., Cincinnati, to Miss Bertha Kleinknecht, at Middletown, Ohio, April 14.

WILLIAM L. MUNROE, M.D., Pittsburgh, Pa., to Miss Frances Rudd Eno of Pine Plains, N. Y., June 1.

RALPH FRANK LUSE, M.D., Comanche, Iowa, to Miss Pearl Minear of Council Bluffs, Iowa, May 26.

CHARLES HENRY SCHMIDT, M.D., Chicago, to Miss Effie Olson of Melrose Park, Ill., May 28.

HERMAN RENNER, M.D., Chattanooga, Tenn., to Miss Marie Kinny of New York City, recently.

WORTH CLARK, M.D., to Miss Florence Cunningham, at Charleston, W. Va., May 14.

ARTER W. DEAL, M.D., to Miss Gladys Smith, both of Lewistown, Mont., May 25.

Deaths

Emil Gruening, M.D. College of Physicians and Surgeons in the City of New York, 1867; a veteran of the Civil War; and a pioneer ophthalmologist and otologist of New York City; died at his home, May 30, from cerebral endarteritis, aged 71. Dr. Gruening was appointed assistant surgeon to the New York Ophthalmic and Oral Institute in 1871; ophthalmic surgeon to Mt. Sinai Hospital in 1879, and to the German Hospital in 1880. At the time of his death he was consulting ophthalmic and oral surgeon to Mt. Sinai Hospital; consulting ophthalmic surgeon to the German Hospital and New York Eye and Ear Infirmary; and consulting surgeon to the New York Infirmary for Women and Children. He had served as president of the American Ophthalmologic Society, American Otological Society and Society for Relief of Widows and Orphans of Medical Men; he was also a member of the American Laryngological, Rhinological and Otological Society, and many other scientific bodies. Among his most notable achievements were the development of the mastoid operation, and his warning regarding the danger of blindness from the use of wood alcohol. He was a voluminous contributor to the literature of his specialty; and was the author of the chapter on "Diseases of the Eye" in Norris and Oliver's encyclopedic work.

Samuel Caldwell Benedict, M.D. Miami Medical College, Cincinnati, 1880; of Athens, Ga.; a member of the Medical Association of Georgia, and its president in 1900; acting assistant surgeon, U. S. Army, in 1880 and 1881; professor of medical jurisprudence in the law school of the University of Georgia, Augusta, since 1883, and professor of materia medica in the school of Pharmacy; local surgeon of the Seaboard Air Line, Central Railroad of Georgia, Gainesville Midland Railroad and Georgia Railroad; president of the Association of Surgeons of the Central Railroad of Georgia in 1903; and of the Association of Seaboard Air Line Surgeons in 1911; a member of the State Board of Health of Georgia, and its president in 1911; died in a sanatorium in Macon, Ga., June 1, aged 58.

Charles Hicklen Preston, M.D. University of Iowa, Iowa City, 1873; a Fellow of the American Medical Association, and one of the oldest practitioners of Davenport, Iowa.; for many years secretary and once president of the Scott County Medical Society; trustee and president of the Davenport Academy of Sciences, and for nine years a member of the board of education; died at his home in Davenport, May 21, from cerebral hemorrhage, aged 69.

Arthur Wharton Swann, M.D. College of Physicians and Surgeons in the City of New York, 1907; an instructor in his Alma Mater; assistant attending physician to the Presbyterian Hospital, and chief of the medical clinic of the Presbyterian Dispensary; died in the Manhattan Eye, Ear and Throat Hospital, New York City, May 28, from septicemia, following an operation on the throat a week before, aged 33.

Joseph Franklin Hobson, M.D. Western Reserve University, Cleveland, Ohio, 1886; a Fellow of the American Medical Association; professor of anatomy in his Alma Mater from 1887 to 1892; and professor of clinical surgery in the Cleveland College of Physicians and Surgeons from 1892 to 1906; one of the founders, chief of staff and visiting surgeon to Cleveland General Hospital, and visiting surgeon to St. John's and the City Hospital; local surgeon of the Pennsylvania and Lake Shore and Michigan Southern railroads; and consulting surgeon to the Brotherhood of Railroad Trainmen; died at his home in Cleveland, May 24, aged 52.

George Washington Hosmer, M.D. College of Physicians and Surgeons in the City of New York, 1864; a member of the Medical Society of the State of New York and New York Academy of Medicine; a veteran of the Civil War; and for many years confidential secretary to the late Joseph Pulitzer, editor of the New York *World;* author of numerous articles and books on political economy; died at his home in Summit, N. J., June 3, from senile debility, aged 83.

Henry St. George Lyons Hopkins, M.D. University of Pennsylvania, Philadelphia, 1855; for several years after his graduation a surgeon on transatlantic steamships; surgeon in the confederate service throughout the Civil War, and lieutenant-colonel of the staff of General Pendleton at its close; a resident of Fresno, Cal., for thirty-three years; at one time health officer of Fresno County; died at his home in that city, May 25, aged 78.

Bret Nottingham, M.D. New York Homeopathic College and Hospital, New York City, 1901; a Fellow of the American Medical Association, and a member of the Michigan State Board of Registration and Medicine; city physician and health officer of Lansing, Mich., and local surgeon for the Lake Shore and Michigan Southern System; died in the Harper Hospital, Detroit, May 26, from malignant disease, aged 37.

Daniel C. Gentsch, M.D. Georgetown University, Washington, D. C., 1889; for several years deputy judge and clerk of the probate court of Tuscarawas County, Ohio, and principal examiner of the United States Pension Bureau; died at his home in New Philadelphia, Ohio, May 30, from cerebral hemorrhage, aged 69.

Edwin Y. Chilton, M.D. Miami Medical College, Cincinnati, 1874; a Fellow of the American Medical Association; formerly state senator and president of the Board of Medical Examiners of Minnesota; one of the most prominent practitioners of that state; died at his home in Howard Lake, Minn., May 25, aged 64.

Abijah Johnson, M.D. Denver, Colo., College of Medicine, 1882; a practitioner since 1863; for five years mayor of Earlham, Iowa; for twenty years president of the school board of Montrose, Colo., and once president of the Montrose County Medical Society; died at his home in Glendale, Cal., May 24, aged 76.

Ellis Sanders Potter, M.D. Long Island College Hospital, Brooklyn, N. Y., 1878; one of the oldest colored practitioners of Louisville, and once professor of theory and practice of medicine and pediatrics in Louisville National Medical College; died at his home in Louisville, May 28, from typhoid fever, aged 64.

Mary L. Widdop, M.D. Medical College of Indiana, Indianapolis, 1901; a member of the Indiana State Medical Association; a member of the medical staff of the Northern Hospital for the Insane of the State of Indiana, Longcliff, Logansport; died in that institution May 26, from nephritis, aged 45.

Joseph O. Walkup, M.D. Chicago College of Medicine and Surgery, 1908; Captain, M. C., U. S. Army; once instructor in physiology and assistant in clinical neurology in his Alma Mater; was struck by lightning and instantly killed, June 1, at Fort Bayard, N. Mex.; aged 29.

Christian Charles Hadley Carlson, M.D. Cooper Medical College, San Francisco, 1894; who founded the Mount Shasta Hospital, Yreka, Cal.; died in San Francisco, May 16, from septicemia following an operation for appendicitis, aged 47.

John Nelson Rankin, M.D. Vanderbilt University, Nashville, Tenn., 1888; a member of the Indiana State Medical Association; formerly of Winchester, Ky.; died at his home in Cartersburg, Ind., May 18, from heart disease.

William J. Worsham, M.D. Washington University School of Medicine, 1868; a confederate veteran; and the oldest pharmacist of Knoxville, Tenn.; died at his home in that city, May 21, aged 74.

Jacob Carpenter Shimer, M.D. University of Pennsylvania, Philadelphia, 1861; surgeon in the federal service during the Civil War; for thirty-five years a practitioner of Baltimore; died at the Home for Widows and Orphans of Physicians, in that city, May 21, aged 75.

Daniel W. Braden, M.D. Medical College of the State of South Carolina, Charleston, 1852; aged 88; a trustee and treasurer of Washington, Pa., College, for several years; died at his home in Lebanon, Tenn., May 19, from the effects of a carbuncle on the neck.

Glenmore Combs, M. D. Louisville, Ky., Medical College, 1875; a member of the Kentucky State Medical Association; of Winchester; for nearly forty years a practitioner of Clark County, Ky.; died in a church in Winchester, May 17, from heart disease, aged 64.

Daniel Webster Border, M.D. Bellevue Hospital Medical College, 1876; formerly a practitioner of Kearneyville, W. Va.; and at one time a member of the State Board of Agriculture; died at his home in Charlestown, W. Va., May 17, aged 60.

Zachariah B. J. Griffing, M.D. Jefferson Medical College, 1844; a practitioner until the age of 75, and then placed in charge of the poorhouse of Warren, Miss.; died at his home in McGehee, Ark., March 21, from cerebral hemorrhage, aged 92.

Bertram U. Doolittle, M.D. Fort Wayne, Ind., College of Medicine, 1905; of Whiting, Ind.; a Fellow of the American Medical Association, and a specialist on diseases of children; died at his home in Whiting, Ind., about May 16, aged 33.

Emma Mary Eastman Sanborn, M.D. Boston University School of Medicine, 1876; for many years a practitioner of Andover, Mass.; a specialist in the care of imbecile children; died at the Barr Sanitarium, Andover, recently, aged 73.

James Savage Woodward, M.D. George Washington University, Washington, D. C., 1880; a member of the Medical and Chirurgical Faculty of Maryland; formerly a surgeon died at his home in Roland Park, Md., May 28, aged 59.

James Henry M. Karsner, M.D. Jefferson Medical College, 1868; a veteran of the Civil War; and a member of the Medical Society of the State of California; died at his home in Oroville, Cal., May 15, from heart disease, aged 69.

John W. Pipkin, M.D. University of Arkansas, Little Rock, 1890; of Tillar, Ark.; aged 44; a Fellow of the American Medical Association; was shot and killed by his father-in-law, Dr. J. T. Cheairs, at Tillar, Ark., May 30.

Bela W. Coggeshall, M.D. Jefferson Medical College, 1866; a member of the Michigan State Medical Society; of Flint, Mich.; aged 72; was struck by a street-car in Detroit, and died as a result of his injuries, about May 23.

Robert Jones Dysart, M.D. College of Physicians and Surgeons, Chicago, 1900; assistant physician at the State Hospital for the Insane, Winnebago, Wis.; died in that institution, May 25, from heart disease, aged 41.

William B. Swisher, M.D. Rush Medical College, 1864; formerly of Lincoln, Neb.; surgeon of Kentucky Volunteers during the Civil War; died at his home in Los Angeles, May 29, from senile debility aged 88.

Michael P. Stoltz, M.D. Louisville, Ky., Medical College, 1896; a member of the Kentucky State Medical Association; of Louisville; died at the home of his sister in that city, May 18, from heart disease, aged 58.

Thomas Edward McDonald, M.D. Detroit College of Medicine, 1894; a Fellow of the American Medical Association; local surgeon at Holly, Mich., for the Grand Trunk System; died at his home, May 22, aged 46.

Hettie M. Stewart McFall, M.D. Southwestern Homeopathic Medical College, Louisville, 1905; of Fort Wayne, Ind.; died at the home of her daughter in New Albany, Ind., May 21, from nephritis, aged 54.

Donald Duncan McDonald, M.D. McGill University, Montreal, 1887; for many years a practitioner of Petitcodiac, Ont.; physician to the Maritime Penitentiary, Dorchester, Ont.; died January 23, aged 55.

William T. Whitaker, M.D. Fort Worth, Texas, University, 1910; formerly of Fort Worth, Texas; died in his room in McKinney, Texas, May 27, from the effects of an accidental overdose of morphin, aged 32.

William Bayard Carroll, M.D. University of Michigan, Ann Arbor, 1880; died at his home in Chicago, May 30, aged 56.

John Underwood Raymond, M.D. University of Michigan, Ann Arbor, 1875; of Washington, D. C.; medical examiner for the United States Pension Bureau; died at his home in Washington, May 15, aged 63.

George Dresser, M.D. Harvard Medical School, 1862; a member of the Massachusetts Medical Society, and a practitioner of Chicopee, Mass., for more than forty years; died at his home, May 16, aged 76.

John Frank Alcorn, M.D. Western Pennsylvania Medical College, Pittsburgh, 1900; a member of the Medical Society of the State of Pennsylvania; died at his home in Wilkinsburg, Pa., May 25, aged 43.

John Laurence Gartland, M.D. New York University, New York City, 1891; a member of the Ohio State Medical Association; and a resident of Cleveland; died in Lakeside Hospital, May 14, aged 47.

Adolph G. Gehr, M.D. Chicago College of Medicine and Surgery, 1908; formerly an intern in Cook County Hospital, Chicago; died in Los Angeles, Cal., May 26, from valvular heart disease, aged 32.

James M. Cooper, M.D. Jefferson Medical College, 1874; of Reinhold's Station, Pa.; for several years physician of Schuykill County; died at the home of his son in Shillington, Pa., May 27, aged 64.

Thomas F. Holaday, M.D. Cincinnati College of Medicine and Surgery, 1864; for fifty years a practitioner of Monrovia and Mooresville, Ind.; died at his home in Monrovia about May 19, aged 79.

Alexander B. Ferrell, M.D. Tulane University, New Orleans, 1873; of Wideners, Ark.; a member of the Board of Health of St. Francis County, Ark.; died at Carlisle, Ark., May 19, aged 64.

Leander Anie Steele (license, six years of practice, Michigan, 1900). Formerly a member of the state tax commission; died at his home in Lansing, Mich., March 11, from pneumonia, aged 64.

John Byron Thomas, M.D. Indiana University School of Medicine, Indianapolis, 1909; house physician at Bethel Hospital, Colorado Springs, Colo; died at Wabash, Ind., May 20, aged 26.

Daniel B. Stewart (license, years' of practice, Ohio, 1896). For sixty-three years a practitioner of Williams County, Ohio; died at his home in Jefferson Township, May 25, aged 92.

Lewis Eugene Stanton, M.D. King Eclectic Medical College, Des Moines, Iowa, 1886; a pioneer resident of the Platte Valley; died at his home in Sterling, Colo., May 8, aged 54.

Lewis Hodges Clapp, M.D. New York Homeopathic Medical College, New York City, 1904; of Brooklyn; died at Lakewood, N. J., May 17, after an operation for appendicitis, aged 33.

Marietta E. Livingston Hughes, M.D. Hahnemann Medical College, Chicago, 1876; of Spokane, Wash.; died in Sacred Heart Hospital, Spokane, May 17, from lobar pneumonia, aged 71.

John M. Dunn, M.D. Missouri Medical College, St. Louis, 1861; surgeon in the confederate service throughout the Civil War; died at his home in Richmond, Ark., May 19, aged 80.

Gibson Francis Brock, M.D. Tulane University, New Orleans, 1909; a member of the State Medical Association of Texas; died at his home in Corrigan, Texas, May 26, aged 30.

Henry Cleves Symmes, M.D. University of Pennsylvania, Philadelphia, 1880; a member of the Medical Society of New Jersey; died at his home in Cranbury, N. J., May 8, aged 58.

Amos W. Bickford, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1865; a pioneer practitioner of Pasadena, Cal., died at his home in that city, May 21, aged 76.

Thomas Egbert Enloe, M.D. University of Nashville, Tenn., 1874; of Nashville; died at the home of his daughter in that city, from cerebral hemorrhage, May 26, aged 69.

John J. Bradley, M.D. Minnesota Hospital Medical College, Minneapolis, 1885; died at his home in Milwaukee, May 12, aged 82.

Littleton B. Richards, M.D. Memphis Hospital Medical College, 1898; died at his home in Avery, Ark., May 14, aged 42.

John H. Page, M.D. University of Louisville, Ky., 1875; died at his home in Madill, Okla., May 16, aged 62.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

BUFFALO LITHIA WATER

Contains One-Fifth as Much Lithium as Potomac River Water

Some years ago, Alexander Haig evolved the theory that most diseases are due to uric acid. The data on which he founded his theory were not corroborated by scientific men, and investigation showed that his methods were unreliable. In spite of the fact that Haig's theories are utterly discredited, and have been for years, the uric acid fallacy still persists, although it is now largely confined to the public. Shrewd business men, especially those who are more intent on making money than they are concerned with the manner in which that money is made, owe much to Haig's theory. As a business proposition, uric acid has been one of the best-paying fallacies on the market—and possibly still is. It is only necessary to refer to THE JOURNAL'S recent article[1] on the Turnock mail-order medical fraud to emphasize this fact.

Contemporary with, and to a certain extent a corollary of, the uric acid fallacy was another, *viz.*, that lithium would eliminate uric acid. This at once gave a good working principle for the proprietary men. Uric acid, we were told,

NOW AND THEN

Showing how "Buffalo Lithia Water" in the course of time became "Buffalo Lithia *Springs* Water." The government has shown that, to obtain a therapeutic dose of lithium from Buffalo Lithia Springs Water, it would be necessary to drink 200,000 gallons of the water. The government also declared that Potomac River water contained five times as much lithium as does Buffalo Lithia Springs Water.

causes disease; lithium, we were also told, would eliminate uric acid; therefore, lithium is the new elixir of life! Could anything be simpler?

Accepting this theory, it was inevitable that mineral waters containing lithium salts should become highly popular. Many exploiters of mineral waters began to place most emphasis on the lithium salts in their waters even in those cases in which lithium was present in such infinitesimal amounts as to render its detection impossible by any but spectroscopic methods.

One of the best known, because most widely advertised, of the so-called lithia waters is Buffalo Lithia Water—or what used to be called Buffalo Lithia Water. After the Federal Food and Drugs Act came into effect, by which falsification on the label was penalized, the name of Buffalo Lithia Water was changed to Buffalo Lithia Springs Water. The reason for this change was that when Buffalo Lithia Water was subjected to examination by the government chemists it was found to contain so little lithium that the amount present was unweighable—it could be demonstrated only by the spectroscope. It was evidently, therefore, not a lithia water in that it did not contain—at least in quantities that could be consumed—an amount of lithium that would give the therapeutic effects of lithium: Possibly the company imagined that by changing the name from "Buffalo Lithia Water" to "Buffalo Lithia Springs Water" it had cleverly evaded the federal law. Their argument was to this effect:

1. THE JOURNAL A. M. A., May 23, 1914, p. 1675.

The springs from which this water is taken are known as Buffalo Lithia Springs; therefore, it is not a misstatement of facts to call this Buffalo Lithia Springs Water.

WHAT IS A LITHIA WATER?

The Supreme Court of the District of Columbia, holding a district court, has recently given an opinion on the Buffalo Lithia Springs Water case. The findings of the court are refreshingly simple, and characterized by that broad commonsense view that is becoming increasingly more common among modern jurists. Read Judge Gould's opinion as to what constitutes a lithia water:

"Speaking generally, and as an individual of average intelligence and information, it would seem that if one were offered a water which the vendor told him was a 'lithia' water, one would have the right to expect enough lithium in the water to justify its characterization as such, thus differentiating it from ordinary potable water; and this amount would reasonably be expected to have some effect on the consumer of the water by reason of the presence of the lithium."

Certainly a reasonable attitude, and one which the man in the street not only can understand but will agree with. Then came the question as to the actual lithium content of Buffalo Lithia Springs Water, and the court said:

"For a person to obtain a therapeutic dose of lithium by drinking Buffalo Lithia Water he would have to drink from one hundred and fifty thousand to two hundred and twenty-five thousand gallons of water per day. It was further testified, without contradiction, that Potomac River water contains five times as much lithium per gallon as the water in controversy."

SOME TESTIMONIALS

Here, then, is a water that has for years been advertised first, in medical journals, and later, in lay publications, as a "lithia water" yet, actually, it contains less lithium, five to one, than is to be found in ordinary river water. This is a point for physicians to ponder well over. Turn to the back volumes of medical journals and read, both in the advertising and reading pages, the elaborate testimonials, given by men high in the medical profession, on the marvelous effects obtained by the use of Buffalo Lithia Water. Read the following in light of the fact that the water from the Potomac River contains five times as much lithium as Buffalo Lithia Water:

"In the class of cases in which lithia, soda and potash are regarded as most specially indicated, I have obtained far better results from the Buffalo Lithia Waters than from any of the preparations of the lithium salts of the Pharmacopeia." (*Statement by a member of the Faculty of Medicine of Paris, France,* etc.)

"Its [Buffalo Lithia Water] therapeutic effects, in my practice, have been vastly superior to those obtained from Lithia Tablets or other Lithia preparations." (*Statement by an ex-president of the University College of Medicine, Richmond, Va., etc.*)

"It [Buffalo Lithia Water] is strikingly superior to emergency solutions of lithia tablets and pure water, even where the said solution is an exceedingly strong one." (*Statement by a former Professor of Clinical Medicine of the College of Physicians and Surgeons, New York, and vice-president of the American Medical Association, etc.*)

"When Lithia is indicated, I prescribe Buffalo Lithia Water in preference to the Salts of Lithia, because it is therapeutically superior to laboratory preparations of Lithia." (*Statement by a former professor in the Medical College of Virginia and ex-president of the Medical Society of Virginia, etc.*)

"Buffalo Lithia Water . . . by its richness of composition of Lithia, is of marvelous efficacy, in cases of gout, of chronic, articular, and muscular rheumatism . . ." etc. (*Statement by former Physician in Ordinary to the Pope; Member of Academy of Rome, etc.*)

"I have tried carbonate of lithia dissolved in water in various proportions; but it certainly does not have the same effect as Buffalo Lithia Water." (*Statement by a former Surgeon-General of the U. S. Army, etc.*)

These are but a few of many testimonials from physicians that might be quoted. They are interesting from many points of view. They show the worthlessness of testimony of this sort—no matter from what source—and the fallacy of that based on so-called clinical evidence.

To go back to the court's findings: In the case of the government against Buffalo Lithia Springs Water, one other judicial opinion is worthy of attention, that referring to the attempt on the part of the exploiters of the water to circumvent, on a technicality, the evident intent of the Food and Drugs Act. Said Judge Gould:

"The argument seems to be that if Buffalo Lithia Springs are falsely named, being called 'Lithia' Springs, when they do not flow water containing lithium, therefore the proprietors have the right to sell the product as being Buffalo Lithia Springs Water, thus perpetuating on the public the misnomer connected with the origin of the water. It is not apparent how the deceit practiced on the public by the label is mitigated by carrying it back to the designation of the spring from which the water comes."

For years no one, apparently, ever criticised the claims made for this product. Finally, we got the Food and Drugs Act and the federal officials, acting under the authority vested in them by that law, in December, 1910, declared Buffalo Lithia Water misbranded. Thus this old established vested interest was attacked. The company, of course, fought. It first demurred to the charge brought, and in April, 1912, the demurrer was sustained. At the same time an amended libel was filed by the government, which the company again demurred to. This demurrer was overruled in June, 1912, whereon the company in December, 1912, filed an answer denying that the water was misbranded. The question has now (1914) been finally decided by the court sitting as a jury, the matter having been submitted by agreement to the court.

Buffalo Lithia Water has been sold since 1878. During this period undoubtedly many physicians have prescribed enormous quantities of this water, and many more laymen have taken the water on their own initiative, based on the advertised claims made for it. Practically all who purchased the water, whether directly or on the advice of physicians, did so in the belief that they were getting lithium. Had they known that, to get a therapeutic dose of lithium they would have had to drink 200,000 gallons of Buffalo Lithia Water, they would have felt, and rightly so, that they were the victims of an expensive hoax.

THE GERMAN PROPAGANDA FOR REFORM

Appreciation by a German Lay Publication

Of all those interested in the reform of the proprietary drug business, the patient has the most at stake—and the public is beginning to understand this fact. If physicians are slow in recognizing the necessity for improvement, laymen will eventually demand reform in their own interests. The movement, therefore, will not be halted by the indifference of the unprogressive element of the medical profession. New evidence of this fact is furnished by a recent editorial comment by the German lay periodical, *Wohlfahrt und Wirtschaft* (Public Welfare and Economics), on the Arzneimittel-Kommission, a German organization resembling in purpose if not in scope the Council on Pharmacy and Chemistry of the American Medical Association.

"One would suppose," says this lay journal, "that medicinal preparations which did not win the approval of scientific medicine would not be used by any physician, but the contrary is the case. In fact, those new medicinal preparations or old ones with new names that flood the market far surpass the actual demand according to the judgment of all authorities. The impartial advisers in this field, practitioners and members of medical faculties, demand, as a matter of public welfare that this overproduction should be regulated in the interests of the sick, the consumers; but, unfortunately, a medical man, like any one else, is impressed by the suggestion from advertising done on a large scale."

The movement for reform, *Wohlfahrt und Wirtschaft* goes on to explain, is not exclusively a medical one. It is a part of the reaction of "economic common sense" against a too individualistic commercial system which leads to overproduction. In other words, it is a reaction against the system of making things because they can be sold rather than because they are needed. The interests of producers need to be har-

monized with those of consumers, not merely in the drug trade alone, but throughout the commercial world. *Wohlfahrt und Wirtschaft* quotes with unqualified approval the Arzneimittel-Kommission's statement of its position: An industry which serves the science of healing must be guided by that science. (*Eine Industrie die der Heilwissenschaft dient, hat sich nach der Heilwissenschaft zu richten.*)

The movement for reform in Germany has apparently gathered sufficient impetus among the laity to go on of its own momentum, even though, with one exception, German medical journals, reluctant to lose the advertising of drug houses by publishing criticisms of their wares, have become lukewarm, if not antagonistic, to the efforts of the Arzneimittel-Kommission. The one exception is the *Therapeutische Monatshefte*, which, in its May issue, quotes in full the editorial just referred to and makes the following comment: "These lines reveal such intimate knowledge and correct judgment of existing conditions that the suggestions advanced in regard to possible reforms deserve serious consideration. For us physicians the editorial is important in that it recognizes that the efforts of the profession to accomplish the reforms aimed at are rational and beneficial from the standpoint of general economics and the public welfare."

Association News

PUBLIC HEALTH SUNDAY IN PHILADELPHIA

Following the custom observed for several years past, the Council on Health and Public Instruction of the American Medical Association has offered this year to furnish speakers for all Philadelphia churches desiring an address on public health on Sunday, June 21, the Sunday preceding the Atlantic City session. A list of the churches, speakers and subjects follows:

BELMONT AVENUE BAPTIST, Corner of Belmont and Westminster, Rev. W. A. Spinney, Pastor.
Morning, 10:30: Dr. J. W. Kerr, Assistant Surgeon-General, U. S. P. H. S., Washington, D. C., "Opportunities of the Church in Public Health Endeavor."

CHELTEN AVENUE BAPTIST, Chelten Avenue above Boyer Street, Rev. P. R. Hayward, Pastor.
Evening, 7:45: Dr. Calvin S. White, Portland, Ore., "Socialization of Medicine."

CHESTNUT STREET BAPTIST, Fortieth and Chestnut streets, Rev. George D. Adams, Pastor.
Evening, 8: Dr. Thomas D. Coleman, Augusta, Ga., "Public Health."

DOTTEREL MEMORIAL BAPTIST, Twenty-Fourth and Dickinson streets, Rev. E. D. Shull, Pastor.
Evening, 8: Dr. Claude A. Smith, Atlanta, Ga., "Public Health."

FIFTH BAPTIST, Eighteenth and Spring streets, Rev. W. Q. Rosselle, Pastor.
Morning, 10:30: Dr. W. W. Grant, Denver, "Public Health."

FIRST BAPTIST GERMANTOWN, Price Street near Germantown Avenue, Rev. Thomas S. Samson, Pastor.
Morning, 10:30: Dr. Oscar Dowling, New Orleans, "Public Health."

FIFTIETH BAPTIST, North Seventh Street and Susquehanna Avenue, Rev. J. Francis Behrens, Pastor.
Morning, 10:30: Dr. Frank B. Wynn, Indianapolis, "Mental Hygiene in Relation to Disease."

THE BAPTIST TEMPLE, Broad and Berks street, Rev. Russell H. Conwell, Pastor.
Morning, 10:30: Dr. Guilford H. Sumner, Des Moines, Iowa, "Disease and Its Prevention."

IMMANUEL BAPTIST, Twenty-Third and Summer streets, Rev. William Oswald, Pastor.
Morning, 10:30: Dr. Charles S. Williamson, Chicago, "The Relationship of Mortality and Public Health."

NORTHWEST BAPTIST, Lehigh Avenue and Twenty-Eighth Street, Rev. W. Dallas Cope, Pastor.
Evening, 7:45: Dr. Robert M. Funkhouser, St. Louis, "Eugenics."

SECOND BAPTIST GERMANTOWN, Germantown Avenue and Upsal Street, Germantown, Rev. Charles H. Dodd, Pastor.
Morning, 10:30: Dr. H. A. Kelly, Baltimore, "Public Health."

TEMPLE BAPTIST, Twenty-Second and Tioga streets, Rev. Thomas C. Bird, Pastor.
Morning, 10:30: Dr. Edward Jackson, Denver, "The Gospel of Health."

THIRD BAPTIST, Broad and Ritner streets, Rev. G. W. Drew, Pastor.
Morning, 10:30: Dr. Hugh Cabot, Boston, "The Control of Disease by Public Opinion."

TIOGA BAPTIST, Broad below Tioga Street, Rev. Rutger Dox, Pastor.
Morning, 10:30: Dr. Jere L. Crook, Jackson, Tenn., "The Stewardship of the Body."

WAYNE AVENUE BAPTIST, Wayne Avenue and Queen Lane, Germantown, Rev. B. L. Newkirk, Pastor.
Evening, 8: Dr. Charles P. Emerson, Indianapolis, "The Message of Modern Medicine."

WOODLAND AVENUE BAPTIST, Woodland Avenue east of Sixty-Fourth Street, Rev. Rittenhouse Neisser, Pastor.
Evening, 7: Dr. Richard C. Newton, Montclair, N. J., "The Human Body."

FIRST CHRISTIAN, Berks and Marvine streets, Rev. Irving S. Chenoweth, Pastor.
Morning, 10:30: Dr. Morgan Smith, Little Rock, Ark., "Public Health, the Paramount Issue."

PRICHARD MEMORIAL LUTHERAN, Sixty-Third and Elmwood Avenue, Rev. J. William H. Heinty, Pastor.
Evening, 7:45: Dr. James P. Warbasse, Brooklyn, "The Socialization of Public Health."

FLETCHER METHODIST EPISCOPAL, Fifty-Fourth and Master streets, Rev. R. H. Crawford, Pastor.
Evening, 7:45: Dr. Miles F. Porter, Fort Wayne, Ind., "A New Health Gospel."

KYNETT MEMORIAL METHODIST EPISCOPAL, Seventeenth and Cayuga streets, Rev. Harry P. Boughey, Pastor: Dr. G. V. I. Brown, Chicago, "The Health of Children and Its Influence in Moral, Physical and National Development."

NORRIS SQUARE METHODIST EPISCOPAL, Susquehanna Avenue and Mascher Street, Rev. E. F. Hoffman, Pastor.
Evening, 7:45: Dr. Henry D. Holton, Brattleboro, Vt., "Social Conditions as They Affect Daily Life."

OLIVET METHODIST EPISCOPAL, Sixty-Third and Grays Avenue, Rev. S. K. McConnell, Pastor.
Evening, 7:45: Dr. J. C. M. Floyd, Steubenville, Ohio, "Social Waste."

PORT RICHMOND METHODIST EPISCOPAL, Indiana Avenue and Thompson Street, Rev. G. B. Burnwood, Pastor.
Evening, 7:45: Dr. Thomas N. Gray, Newark, N. J., "Save the Babies."

PROVIDENCE METHODIST EPISCOPAL, Front Street and Allegheny Avenue, Rev. Walter B. Smith, Pastor.
Evening, 7:45: Dr. C. E. Cantrell, Greenville, Tex., "Public Health."

SILOAM METHODIST EPISCOPAL, East Susquehanna above Thompson, Rev. John C. Petre, Pastor.
Morning, 10:30: Dr. Lucien Howe, Buffalo, N. Y., "The Morality of Eugenics."

SUMMERFIELD METHODIST EPISCOPAL, corner Tulip Avenue and East Dauphin, Rev. F. A. Gacks, Pastor.
Evening, 7:45: Dr. Thomas S. Cullen, Baltimore, "Cancer."

TWENTY-NINTH STREET METHODIST EPISCOPAL, Corner Twenty-Ninth and York streets, Rev. John D. C. Hanna, Pastor.
Morning, 10:30: Dr. V. C. Vaughan, Ann Arbor, Mich., "The Evolution of the Superman."

COVENANT PRESBYTERIAN GERMANTOWN, Chelten Avenue and Limekiln Pike, Rev. Harle W. Hathaway, Pastor.
Morning, 10: Dr. S. L. Jepson, Wheeling, W. Va., "The Fallacy of Faith Healing."

EMMANUEL PRESBYTERIAN, Girard Avenue and Forty-Second Street, Rev. Edward S. Bowman, Pastor.
Evening, 7:45: Dr. Woods Hutchinson, New York, "Am I My Brother's Keeper?"

NINTH PRESBYTERIAN, Fifty-Seventh Street and Washington Avenue, Rev. John A. Higgons, Pastor.
Evening, 8: Dr. R. E. Brenneman, Pittsburgh, "Prevention of Cancer."

PURITAN PRESBYTERIAN, Second and Clearfield streets, Rev. James G. Raymond, Pastor.
Evening, 7:45: Dr. E. A. Hines, Seneca, S. C., "Vital Problems in Preventive Medicine."

WEST HOPE PRESBYTERIAN, Preston and Aspen streets, Rev. Charles E. Bronson, Pastor.
Evening, 7:45: Dr. H. W. Wiley, Washington, D. C., "Public Health."

WEST PARK PRESBYTERIAN, Fifty-Fourth Street and Lansdowne Avenue, Rev. C. Grant Hopper, Pastor.
Evening, 7:45: Dr. Thomas D. Crothers, Hartford, Conn., "Scientific Side of the Temperance Question."

OVERBROOK PRESBYTERIAN, Corner City and Lancaster avenue, Rev. Guido Bossard, Pastor.
Evening, 8: Dr. C. S. Bacon, Chicago, "How to Prevent Sickness and Prolong Life."

FOURTH UNITED PRESBYTERIAN, Nineteenth and Fitzwater streets, Rev. J. C. Scouller, Pastor.
Morning, 10:30: Dr. Angus McLean, Detroit, "Health Education a State Duty."

DALES MEMORIAL UNITED PRESBYTERIAN, Thirty-Second, corner Cumberland, Rev. T. B. Turnbull, Pastor.
Morning, 11: Dr. John L. Heffron, Syracuse, N. Y., "Public Health and Public Morals."

ALL SAINTS EPISCOPAL, Torresdale, Rev. A. R. Van Meter, Rector.
Morning, 10:30: Dr. W. C. Rucker, Assistant Surgeon-General, U. S. P. H. S., Washington, D. C., "The Church and Industrial Disease."

ST. JOHN'S EPISCOPAL, Brown Street near Third, Rev. George Chalmers Richmond, Rector.
Evening, 7:45: Dr. Joseph C. Bloodgood, Baltimore, "Control of Cancer."

CALVARY REFORMED, Twenty-Ninth and Lehigh Avenue, Rev. F. H. Fisher, Pastor.
Evening, 7:30: Dr. S. A. Knopf, New York, "How to Improve the Physical, Mental and Moral Condition of our Schoolchildren."

HEIDELBERG REFORMED, Nineteenth and Oxford streets, Rev. Rufus C. Zartman, Pastor.
Evening, 7:45: Dr. A. L. Benedict, Buffalo, "Public Intelligence and Information as Factors of Public Health."

MT. HERMON REFORMED, Sixteenth and Wingohocking streets, Rev. C. B. Alspach, Pastor.
Evening, 8: Dr. B. R. McClellan, Xenia, Ohio, "Conservation of Child Life."

ST. MARK'S REFORMED, Fifth Street above Huntingden Pt., Rev. George A. Sheer, Pastor.
Morning, 10: Dr. Charles H. Cook, Natick, Mass., "Public Health."

GIRARD AVENUE UNITARIAN, Girard Avenue above Fifteenth Street, Rev. S. E. Evans, Pastor.
Morning, 10:45: Dr. Walter B. Cannon, Boston, "Social Responsibilities Arising from Medical Progress."

BETHEL UNITED EVANGELICAL, Twelfth Street above Lehigh Avenue, Rev. John W. Slack, Pastor.
Evening, 7:45: Dr. L. Mervin Maus, Colonel Medical Corps, U. S. Army, Governor's Island, N. Y., "The Effect of Alcohol on Society."

ALL SOULS UNIVERSALIST, Forty-Seventh Street and Larchwood Avenue, Rev. Thomas W. Illman, Pastor.
Dr. G. M. Ilman, Philadelphia, "Some Things the Public Should Know about Medicine and The American Medical Association."

In addition, through the courtesy of Archbishop Prendergast, the 104 Catholic priests of Philadelphia have been supplied with copies of a special address on "Our Progress in Medicine," by Dr. J. J. Walsh of New York. This address will be used by the parish priests as the basis for sermons on public health which will be delivered to the congregations on Sunday morning, June 21.

Correspondence

The Necessity of Adopting State Laws Regulating the Nature of the Liquids to Be Used for Embalming Purposes

To the Editor:—A recent experience brought forcibly to my notice the desirability that laws regulating the nature of embalming fluids should be enacted. In analyzing certain organs from a body in which there were many reasons to suspect arsenical poisoning, I was able to isolate large amounts of mercury and arsenic. Examination of the embalming fluid used in this case showed it to contain arsenic and mercury. On this account no case could be made out against the supposed administrators of the poison.

When one realizes that there are no restrictions in this country regarding the nature of embalming fluids to be used except in the states of New York, New Jersey and Michigan, the chance of detecting poisoners after the embalming is done is rather slim. This is especially true as regards the use of arsenic and mercury, as they are almost invariably present in the embalming fluids now used. In Michigan the law prohibits only the use of arsenic. In New Jersey the law provides that "no person shall employ for the purpose of embalming or preserving any dead human body, any arsenical solution nor any other poisonous agent which may, by its presence in the viscera, prevent the detection of criminal uses of said poisonous agents before the death of the individual occurred."

The state of New York has by far the best law regulating the nature of the embalming fluid to be used. It is as follows:

> No embalmer shall inject into any dead human body for the purpose of preserving, disinfecting or embalming the same any fluid that is not a thorough germicide in the proportions ordinarily used in embalming, that is, eight parts of fluid to 150 parts of body-weight, or that contains arsenic, zinc, mercury, copper, lead, silver, antimony or chloral or any substance or compound that contains either or any of them, or any poisonous alkaloid. Except that nothing in this regulation shall apply to the use of the above-named substances in any duly incorporated medical college or scientific institution by those having in their legal possession human cadavers intended to be used for the purpose of medical study or other legitimate purposes.

The New York regulations also prohibit the sale of embalming liquids containing the poisons above mentioned and provide for the bacteriologic examination, chemical analyses and certification of such liquids by the board.

It is most desirable that the other states in this country enact laws similar to those adopted in New York State. At the next meeting of the Pennsylvania legislature, I shall have introduced a bill similar to that adopted in New York. It may be of interest to observe that France in 1846 prohibited the use of arsenic in embalming fluids.

JACOB ROSENBLOOM, M.D., PH.D., Pittsburgh.

[COMMENT.—Reference to the laws of the various states would indicate that our correspondent is too sweeping in his statement as to the lack of restrictions outside of New York, New Jersey and Michigan.

Illinois has a statute on this specific point, and while in some ways it may not be quite so effective as the New York law, it would seem to carry more weight, inasmuch as a penalty is attached. See Illinois Sess. Laws, 1907, page 257, and Chapter 31, Sec. 25, Illinois Sess. Laws, 1907.

Iowa vested its Board of Health with jurisdiction over embalmers. This board has promulgated a set of rules precluding the use of other material than that which is specified in the rules, from an examination of which it appears that the objectionable substances cannot be used. See Chap. 4, Rule 3, Regulations of the Iowa State Board of Health, on the care of the dead. See also Chap. 16, Title 12, Iowa Code, as to to the powers of the State Board of Health.

South Dakota similarly vests its board with a like jurisdiction. This state has also forbidden the use of objectionable poisons. See Regulations of the South Dakota State Board of Health for 1913, Sec. 144.

Moreover, in a number of states in which the use of specific poisons is not forbidden, the ground is nevertheless fairly well covered in the provision that "it shall be unlawful for any person or persons to embalm . . . any dead body . . . in case the death is believed to be due to other than natural causes, or the cause thereof is unknown . . . without a proper death certificate which has been signed or approved by the coroner." See 31 and 32 of the statutes at large, U. S., Sections 683, 684. Also Kansas Embalmers Law for 1912, Sec. 9764; Chap. 181, Maine Sess. Laws, 1911; Section 12; Rules and Regulations of the Massachusetts Board of Embalmers for 1908, Sec. 9; Chap. 76, New Hampshire Sess. Laws, 1899, Sec. 5; Rules and Regulations of Rhode Island Board of Embalmers for 1912, Sec. 8; and Act 216, Vermont Sess. Laws, 1910, Sec. 7.

Finally, a number of states vest their boards of health with power to make regulations touching the proper care of the dead. See Conn. Code as amended, 1909, Sec. 1962; and rules of the Connecticut Board of Health, Feb. 5, 1902; Laws and Regulations touching on embalmers, Idaho, 1909, Sec. 6; Chap. 101, Minnesota Sess. Laws, 1905; Embalmers Law, Oregon, Sec. 9; and Chap. 420, Wis. Sess. Laws, 1905, Sec. 8; Cf. Wisconsin Code, Sec. 1408-1409.—ED.]

McClure's Mistake

To the Editor:—THE JOURNAL is to be congratulated on the promptness with which it has commented on the article "Painless Child-Birth" in the June issue of *McClure's.*

As the article has much in common with the paper Krönig read before the Chicago Gynecological Society in November, 1913, entitled, "The Difference between the Older and the Newer Treatments by X-Ray and Radium in Gynecological Diseases," and published in the May issue of *Surgery, Gynecology and Obstetrics,* I was impressed that the data for the article in *McClure's* could not have been obtained without at least the passive cooperation of Krönig, Gauss, or both. I, therefore, wrote *McClure's* to inquire if the article had been gone over by Krönig and Gauss and published with their consent. Enclosed you will find a copy of the reply received from *McClure's,* which answers the editorial comment in THE JOURNAL, June 6, 1914, page 1815, which states that "If the publication was sanctioned by either or both of them it indicates an advertising initiative which bids fair to rival Friedmann," and will at least, if published, enlighten the members of the profession in this matter.

I read the article in *McClure's* with much interest, but was amazed that it had slipped through the editorial department, as it reads like an advertisement put out by a charlatan, or by a pharmaceutical house with its "ethical proprietary" advertised to the public.

S. E. TRACY, M.D., Philadelphia.

COPY OF LETTER RECEIVED FROM MCCLURE'S

McClure's Magazine
The McClure Publications
Fourth Avenue and 20th Street, New York.

Editorial Department.

May twenty-fifth, 1914.

Dear Doctor:

In reply to your letter of May nineteenth, I have to say that the article on "Painless Childbirth" in June McClure's, is technically correct and was read by Prof. Krönig and Dr. Gauss and published with their consent.

Yours very truly,

(Signed) J. WILLARD CONNELY

Dr. Stephen E. Tracy,
1527 Spruce Street.
Philadelphia, Pa.

Stubbornness.—Obstinacy is the result of the will forcing itself into the place of the intellect.—Schopenhauer.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE ABSORPTION OF IRON FROM MINERAL WATERS

To the Editor:—In a Current Comment on this subject (THE JOURNAL, March 14, 1914, p. 856), there is a statement to the effect that both organic and inorganic iron can be absorbed and satisfactorily carry out the purposes for which they are ordinarily administered. Will you please give me references to the results which you have considered evidence as to the truth of that statement? I wish to present the proofs to a class in dietetics at the University.

MARIA MADDEN, Lawrence, Kan.

ANSWER.—The evidence regarding iron absorption was mostly interpreted prior to the first clear demonstration that the bowel forms the most important channel for the excretion of this element. The failure to find any increase in the amount of iron eliminated with the urine by the kidneys after the ingestion of the element in some form or other was taken as an indication that it had not been absorbed. To-day we know that it can be both absorbed and excreted by the intestinal wall. For this reason references to the very early literature on the subject now have merely historical interest.

The conclusion that both forms of iron compounds, namely, the organic and the inorganic or ionized types, can be absorbed, is based on a variety of experimental evidences. The total intake and output of iron have been ascertained in some cases, and the favorable balance or retention of iron accepted as evidence. The intestinal mucosa has been examined by microchemical methods to demonstrate the entrance of ingested iron. Iron has been detected in the thoracic lymph soon after the introduction of ferric chlorid into the stomach. Various organs and even the entire bodies of animals have been examined to learn whether they have become enriched by the forms of iron compounds administered. Animals have been rendered anemic by hemorrhage and thereon the efficiency of the two kinds of iron derivatives in restoring the hemoglobin of the blood ascertained. Clinical observations on anemic patients have been drawn on to contribute to the same end.

The debate on the subject has been prolonged. The absorption of inorganic iron is now universally admitted. The question whether it can serve *directly* for hemoglobin formation has not been so easily answered. Some have inclined to the view that the absorbed inorganic iron acts merely as a stimulus to the hemopoietic organs to convert the organic forms into the blood pigment. The changing views of digestion formulated in recent years make it easier to understand that all iron probably becomes ionized in the intestine before absorption, and that synthetic transformations of the element occur later in any event, if it is to be retained in the organism.

An elaborate review of the subject, with a complete bibliography to 1906, has been prepared by Meyer, E.: Ueber die Resorption und Ausscheidung des Eisens, *Ergebn. d. Physiol.*, 1906, v, 668. An excellent discussion of the question is furnished in Sherman, H. C.: Chemistry of Food and Nutrition, New York, the Macmillan Company, 1911, p. 232, and following. Abderhalden's contributions are considered in his Text-Book of Physiological Chemistry, translated by Hall, New York, John Wiley & Sons.

THE BOAS EXTRA-ANAL TREATMENT OF HEMORRHOIDS

To the Editor:—Please describe the Boas extra-anal treatment of hemorrhoids.

A. M., Detroit.

To the Editor:—What is the Boas method for the extra-anal treatment of hemorrhoids?

A. J. NOSSAMAN, M.D., Pagosa Springs, Colo.

ANSWER.—The Boas method consists of extruding the tumors, applying Bier's suction to them until a ring of edema forms, the time being about sixty minutes, and leaving the tumors outside the anus. The hemorrhoids shrivel in consequence of the interruption to the circulation and eventually disappear. The patients are confined to bed about two weeks. The following articles may be referred to:

Boas, I.: Extra-Anal, Non-Operative Treatment of Hemorrhoids, *Arch. f. Verdauungskr.*, 1909, xv, No. 2; abstr., THE JOURNAL, March 22, 1909, p. 1725.

Boas, I.: Bloodless Cure of Hemorrhoids, *München. med. Wchnschr.*, Jan. 30, 1912; abstr., THE JOURNAL, March 9, 1912, p. 742.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POSTGRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

A PRACTICAL STATE-WIDE CAMPAIGN IN VENEREAL PROPHYLAXIS AND SEX INSTRUCTION, INCLUDING LEGISLATION AGAINST QUACKS

Oregon has had in operation for over two years a plan of education in venereal prophylaxis and sex instruction. The movement originated in Portland in 1911 in a call issued by a committee of the Y. M. C. A. for a meeting of citizens to combat the social evil in that city. An organization was effected which later merged into the Oregon Social Hygiene Society. Its efforts have been extended to the entire state, and the legislature and State Board of Health have cooperated in the work. The head of the society from the beginning has been the state health officer, Dr. Calvin S. White.

During the first year the work was confined almost entirely to Portland. Meetings were held among the young people, the parents, and in various business houses and industrial establishments. Talks on health topics were given, gradually introducing the subject of sex hygiene. State Board of Health notices regarding venereal diseases were given publicity and circulars were distributed through paymasters and other channels. Permanent and temporary traveling exhibits in the form of posters and panels were also provided in Portland and a large number of other cities of Oregon. These concerned the subjects of sex hygiene, venereal prophylaxis, "men's specialists" quacks and their fraudulent methods, and offered free advice by the State Board of Health.

LEGISLATION AFFECTING QUACKS

The state legislature in 1913 passed the following law in regard to quacks and quack advertising:

SEC. 2095. Any person who shall advertise or publish any advertisement intended to imply or be understood that he will restore manly vigor, treat or cure lost manhood, lost power, stricture, gonorrhea, chronic discharges, gleet, varicocele or syphilis, or any person who shall advertise any medicine, medicinal preparation, remedy or prescription for any of the ailments or diseases enumerated in this act shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than $100 nor more than $1,000, or by imprisonment in the county jail for a period of not less than six months nor more than twelve months, or by both such fine and imprisonment. Any owner or managing officer of any newspaper in whose paper shall be printed or published any such advertisement as is described in this act shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than $100 nor more than $1,000, or by imprisonment in the county jail for a period of not less than six months, or by both such fine and imprisonment.

As a result of the passage of this law and of the steadily growing public sentiment against the methods of quack doctors, their business steadily decreased. The cooperation of the newspapers of Portland (with one exception) was secured so that a minimum of advertising space was available for the quack doctors. Many offices were closed and the business of others decreased. In 1911 grand jury indictments were obtained in Portland against a number of advertising quacks for violation of the state law which prohibits advertising to cure certain specific ailments. The newspapers of the state also generally support the movement, and only two or three continued to publish one or more advertisements of the "men's specialists." As shown by the report of the society, at the end of 1913 there were in the whole state only five of the old quack concerns, and in addition about five Chinese concerns which did a general practice. None of them advertise as "men's specialists"; all purport to treat both men and women for various diseases. The only remaining "museum of anatomy" in the state went out of business during the year. Among the quack institutions named in the poster campaign are the "Oregon Medical Institute," "Pacific Coast Medical Co.," "Dr. A. G. Smith, specialist,"

"Dr. Lindsay," "Dr. Warren," "Dr. C. K. Holsman," "Truthful Travis Oriental Remedy Co.," "Asiatic Acme Remedy Co.," and "J. J. Keefe, Ph.G., M.D."

In addition to the act regarding fraudulent practice and advertising, the legislature of 1913 lent its substantial support to the Oregon Social Hygiene Society in the form of an appropriation of $10,000, to be paid direct to the society for carrying on and extending its work throughout the state. The campaign is an example of the good results which may be achieved by united efforts encouraged by newspaper and legislative assistance.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, July 14. Chairman, Dr. W. H. Sanders, Montgomery.

ALASKA: Juneau, July 7. Sec., Dr. Henry C. De Vighne, Juneau.

ARIZONA: Phoenix, July 7-8. Sec., Dr. John Wix Thomas, Phoenix.

CALIFORNIA: Los Angeles, June 16. Sec., Dr. C. B. Pinkham, 135 Stockton St., San Francisco.

COLORADO: Denver, July 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven, July 14-15. Sec., Dr. Chas. A. Tuttle, New Haven. Homeopathic: New Haven, July 14. Sec., Dr. Edwin C. Mc. Hall, New Haven. Eclectic: New Haven, July 14. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

DELAWARE: Dover and Wilmington, June 16-18. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

FLORIDA: Palatka, June 17-18. Sec., Dr. E. W. Warren, Palatka.

ILLINOIS: Chicago, June 23-25. Sec., Dr. C. St. Clair Drake, Springfield.

INDIANA: Indianapolis, July 14-16. Sec., Dr. W. T. Gott, State House, Indianapolis.

KENTUCKY: Louisville, June 15-17. Sec., Dr. A. T. McCormack, Bowling Green.

MAINE: Augusta, July 7-8. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MARYLAND: Baltimore, June 15. Regular Board: Sec., Dr. J. McP. Scott, Hagerstown. Homeopathic: Baltimore, June 15. Sec., Dr. O. N. Duvall, 1817 N. Fulton Ave., Baltimore.

MISSISSIPPI: Jackson, June 16-17. Sec., Dr. E. H. Galloway, Jackson.

MISSOURI: St. Louis, June 15-17. Sec., Dr. J. A. B. Adcock, Jefferson City.

MONTANA: Helena, June 30-July 2. Sec., Dr. Wm. C. Riddell, Helena.

NEW HAMPSHIRE: Concord, July 1-2. Regent, Mr. H. C. Morrison, Concord.

NEW JERSEY: Trenton, June 15-16. Sec., Dr. H. G. Norton, 429 E. State St., Trenton.

NEW MEXICO: Santa Fe, July 13. Sec., Dr. W. E. Kaser, East Las Vegas.

NEW YORK: June 23-26. Chief of Examinations Division, Mr. Harlan H. Horner, Department of Education, Albany.

NORTH DAKOTA: Grand Forks, July 7. Sec., Dr. G. M. Williamson, Grand Forks.

OKLAHOMA: Oklahoma City, July 14. Sec., Dr. John W. Duke, Guthrie.

OREGON: Portland, July 7-9. Sec., Dr. L. H. Hamilton, Medical Bldg., Portland.

RHODE ISLAND: Providence, July 2-3. Sec., Dr. Gardner T. Swarts, State House, Providence.

SOUTH DAKOTA: Deadwood, July 14. Sec., Dr. Park B. Jenkins, Waubay.

TEXAS: Austin, June 23-25. Sec., Dr. W. L. Crosthwait, Waco.

UTAH: Salt Lake City, July 6-7. Sec., G. F. Harding, 405 Templeton Bldg., Salt Lake City.

VERMONT: Burlington, July 14-17. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 23-26. Sec., Dr. Herbert Old, Norfolk.

WASHINGTON: Seattle, July 7. Sec., Dr. C. N. Suttner, Baker Bldg., Walla Walla.

WEST VIRGINIA: Elkins, July 1. Sec., Dr. S. L. Jepson, Wheeling.

WISCONSIN: Milwaukee, June 29. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

WYOMING: Laramie, July 9-11. Sec., Dr. H. E. McCollum, Laramie.

MEDICAL EDUCATION *

Kendric C. Babcock
Dean of College of Liberal Arts and Sciences of the University of Illinois
URBANA, ILL.

No single feature of improvement in higher education in the last seven years better deserves reiterated emphasis and approval than the progress in medical education. The changes of the last year give renewed cause for satisfaction. The continued decrease in the number of medical schools, from 162 in 1906 to 106 in 1913, is fresh evidence of sound appreciation of the vital necessity of most thorough, exacting and scientific training in laboratories, and actual, practical apprenticeship under expert direction in large hospitals.

By the action of the Council on Medical Education of the American Medical Association, acting in cooperation with the Association of American Medical Colleges, a new milestone in the progress of medical education was established in the spring of 1913. Step by step the curriculum of a standard medical school has been extended to cover four years; admission has advanced from the modest requirement of the completion of high-school education to requirement of a preliminary college year, which should include at least physics, chemistry and biology. Forty-three medical colleges at the close of the period covered by this report were enforcing at least this requirement; others have announced that it will go into effect in 1913; still others have signified their intention to put it into operation in 1914. By these schedules there should be after January, 1914, seventy-one medical colleges requiring for entrance one year of college work, including courses in physics, chemistry, biology and a modern language. But this is not the whole story. Thirty of them, including those which require a bachelor's degree for admission, now demand two years of work in a college of liberal arts, in addition to a high-school course covering four years, and nine have announced the adoption of the two-year collegiate requirement, to become effective before the end of 1915.

The Council on Medical Education, by its announcement of the basis on which medical colleges will be rated in the council's classification as "Class A+, acceptable medical colleges," and "Class A, colleges lacking in certain respects, but otherwise acceptable," has fixed and defined this new or collegiate requirement of a single year (THE JOURNAL, Aug. 23, 1913, p. 582). This requirement for admission becomes effective on and after Jan. 1, 1914. The Association of Medical Colleges expresses its requirement in slightly different terms—"one year each of physics, chemistry and biology of college grade, each not less than eight hours." While these two associations have no legal authority to compel the acceptance of their standards, the value of the recognition accorded to an institution by placing it in Class A+ or Class A is so great that ambitious institutions cannot afford to defer compliance longer than is absolutely necessary. It should be noted in this connection that the information on which classification by the Council is made or admission to the Association of Medical Colleges accomplished is based on the direct personal examination of the work of institutions listed by an agent or by a committee of these two organizations. The rating, therefore, is not a paper-made affair, but one which commends itself because of its thoroughness and because it is continually kept up to date by visitation, conference and correspondence.

Confronted by the enormously increased cost of maintaining a first-class medical school, the movement to surrender medical education to the state university or to put it under the care of the state has gone on apace during the year under discussion. The medical college of Drake University, Des Moines, Iowa, was transferred by a cordially amicable arrangement to the State University of Iowa; the medical college of Willamette University, Salem, Ore., has been discontinued and all medical education in Oregon will be carried on by the University of Oregon, in Portland. The state of South Carolina has adopted and made appropriations for the Medical College of the State of South Carolina, located at Charleston. An agreement has been perfected by which the University of Alabama will take over the Birmingham Medical College and make of it the postgraduate department of the university's medical school. The College of Physicians and Surgeons of Chicago, which has had an intermittent affiliation with the University of Illinois, without receiving any state aid, however, has recently turned over all its property to the university and gone out of existence as a separate corporation. State aid, which was once defeated by the veto of the governor and once by a decision of the supreme

* Part of report on Higher Education in Chapter II of the 1913 report of the U. S. Bureau of Education.

court of the state, seems now assured. The two medical schools in Richmond, Va., the Medical College of Virginia, which has received a small subsidy from the state, and University College of Medicine, which must not be confused with the medical school connected with the University of Virginia, at Charlottesville, have united as the result of long negotiations.

The financial resources of the medical schools have shown gratifying increases. State appropriations have been generous both for maintenance and for buildings, while gifts running into the millions for hospitals, for instruction and for endowment of research fill the record of the year. The campaign of the Western Reserve University, of Cleveland, in the past two years resulted in a total of $1,533,000 of endowment for the medical department of that institution. During the past year the University of California received an aggregate of nearly $480,000 toward a total of $600,000 for teaching hospital, and the George William Hooper Medical Endowment, consisting of property valued at considerably more than $1,000,000, perhaps ultimately $2,000,000, for purposes of medical research.

New Rules in Illinois

From Dr. C. St. Clair Drake, secretary of the Illinois State Board of Health, we have received the following notice of an amendment to the rules and regulations relative to the administration of an act to regulate the practice of medicine in Illinois, in force July 1, 1899. The notice is dated May 26, 1914:

Examinations of candidates for state certificates authorizing the practice of medicine and surgery in Illinois will be held in Chicago, in January, May, June and October, as far as practicable, each year.

All examinations will be in writing and will embrace the subjects hereinafter stated, these subjects being covered in ten papers, each paper being made up of ten questions, as per the following grouping: (1) chemistry, etiology and hygiene; (2) physiology and neurology; (3) anatomy; (4) materia medica and therapeutics; (5) pathology and bacteriology; (6) surgery; (7) physical diagnosis, ophthalmology and otology, pediatrics; (8) obstetrics; (9) gynecology, laryngology, rhinology and medical jurisprudence; (10) practice of medicine.

A candidate to be entitled to a state certificate authorizing the practice of medicine and surgery in Illinois must obtain in his examination a general average of not less than 75 per cent., with a rating of not less than 60 per cent., in any one paper, as set forth in the preceding paragraph.

This amendment is to take effect and become operative in all examinations given by the Illinois State Board of Health, after July 1, 1914.

Connecticut March Report

Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the practical and written examination held at New Haven, March 10-11, 1914. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 20, of whom 14 passed and 6 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Yale Medical School	(1911)	87.2
Baltimore Medical College	(1909) 75.1,	75.6
Johns Hopkins University	(1911) 77.5; (1913)	88.1
Maryland Medical College	(1911) 75.8; (1912) 75.1; (1913)	82.4
University of Maryland	(1912)	81
John A. Creighton Medical College	(1913)	81.7
Albany Medical College	(1894)	77.3
Woman's Medical College of Pennsylvania	(1913)	82.6
University of Vermont	(1912) 77,	81.6
FAILED		
College of Physicians and Surgeons, Baltimore	(1913)	67.5
Maryland Medical College	(1913) 63.3,	65.5
College of Physicians and Surgeons, Boston	(1908)	65.5
University of the South	(1902)	63.5
University of Catania, Italy	(1912)	63.3

Book Notices

A TREATISE ON THE DISEASES OF WOMEN. For Students and Practitioners. By Palmer Findley, B.S., M.D., Professor of Gynecology, College of Medicine, State University of Nebraska. Cloth. Price, $6 net. Pp. 954, with 670 illustrations. Philadelphia: Lea and Febiger, 1913.

This treatise is an outgrowth of the author's "Diagnosis." The subject-matter is divided into thirty-four chapters, arranged in order rather different from that usually employed, which necessitates considerable overlapping of subjects. Yet if we view this fact from the position of the student who is reading the subject for the first time, we shall agree that it is no detriment to have the repetitions. Indeed, it may be a source of advantage. A wide knowledge of the literature is shown in nearly every page, especially in the chapters developed from some of the author's comprehensive papers. It is to be regretted that a bibliography is not given. There is a remarkable freedom from unsupported and dogmatic assertions, and the book is scholarly in tone. A critical examination shows much to commend and little to criticize. The work seems so strong that attention is called to certain points to which we may object with the hope that they may be corrected in future editions of the book.

The chapters on hemorrhage are arranged to give the student a clear idea of the menstrual phenomena. The author, however, like so many others, has incorporated the old myth that the Caucasian race is more subject to carcinoma and the African to fibroids (p. 21). This statement receives but little support (p. 576) where he states that Kelly and Williams, who have had abundant opportunity to make reliable observations, deny that the negress is preeminently susceptible to fibroids. Even were the result contrary, the observation of 357 cases should not permit of conclusions which may be applied to an entire race. It is surprising to note that in the treatment of dysmenorrhea, treatment by stem pessaries is dismissed in four lines of disfavor, while Pozzi's operation, which to some authorities has no fundamental basis whatsoever, is pictured in four three-quarter-page drawings. Incidentally, Findley is not a believer in tents for cervical dilatation, restricting his choice to the Hegar dilators. Fatigue is not mentioned as a cause for backache, and the author apparently believes that douching will cure leukorrhea—thus marring, to some extent, a very good chapter.

The chapter on sterility shows breadth of view. The effect of acid secretions is considered; extract of corpus luteum is advised in the artificial menopause. A chapter on the examination of the blood is wisely inserted, yet on first glance would appear to be unnecessary in a work of this type. The same statement applies to the chapter on the microscopic examination of scrapings. A valuable chapter on non-operative methods of treatment precedes the preparation for operation. Massage and pressure therapy are discussed quite fully, and organotherapy and serum therapy have a page. Polak's results in the treatment of pelvic infections with vaccines are quoted as encouraging. The absence of diagrams illustrating the method of replacing a retroposed uterus both in the description of non-operative methods and in the discussion of retroversions is to be regretted. They would seem quite as valuable to the student as the illustration of the man in an undershirt painting iodin on an abdomen (p. 245). The author uses Schleich's solution for local anesthesia. The method of putting on dry sterile gloves is splendidly shown on page 253. This is a most valuable illustration and one which could be shown (unfortunately) to the majority of operating-room nurses to the benefit of their technic. How often nurses, in holding gloves for the operator to thrust his hand into, manage to touch the bare hand and thus (frequently) contaminate their gloves! At the same time the illustration on page 274, which depicts one finger in the urethra and the other in the rectum to demonstrate an atresic vagina, should be condemned. At present, methods which demand

the insertion of a finger into the urethra have no place in modern gynecology. Unfortunately the students frequently remember the illustrations longer than the text, and some novitiate will undoubtedly attempt such a barbarous procedure. With this exception, the difficult subject of anomalies of the vagina and uterus is ably handled. The order of presentation of the displacements of the uterus does not appear logical, even though it has the authority of like arrangement in several Scottish and English texts. Retroversion with descent is the natural prologue of procidentia and is best considered before it. The discussion of the various postures which a displaced uterus may assume is not wisely inserted, as it is apt to confuse the student so that he remembers the details rather than the principles. It is only fair to say, however, that in comparison with many American texts the discussion of retrodisplacements here given is simplicity itself.

Findley advises the Todd-Gilliam operation, as well as the Webster, the illustrations of which (Baldy) do not show the ligaments spread out fan-shape on the back of the uterus as they must be to prevent recurrence, and indeed as they are described in the text. In the chapter on inflammation of the uterus the author appears committed to the older nomenclature. Thus he describes many erosions (non-cancerous) which would be far better described as what they really are, eversions, and appears unwilling to accept the splendid work of Hitchman and Adler at its face value. Therefore, he gives a clinical and anatomic classification of endometritis, and in the latter retains the old divisions of Ruge and Veit. The treatment of puerperal infection is well given. He does not use the curet, and does not recommend hysterectomy. He does stimulate with strychnin, and does not suggest the need of obtaining rest and sleep, with opium if necessary, nor does he suggest outdoor treatment.

Findley still uses Noble's compilation of 2,274 cases to enforce his arguments. He quotes the much-quoted statement of Bayle, misspelled in the text as Boyle (p. 576), that 20 per cent. of women more than 35 years of age have fibroids. This statement made prior to 1813 cannot be traced beyond the point where Bayle, in an article in the Dictionnaire des sciences médicales, says in making the necropsy on 100 women of more than 35 years in age, 20 per cent. will be found to have fibroids. It is time we dropped such loose statements from our literature.

This work, which combines safe treatment and scholarly consideration may be commended as one of the best volumes of its class in recent times. The publishers also deserve congratulation, as they have done their part well in the preparation of an interesting text.

GRUNDSÄTZE FÜR DEN BAU VON KRANKENHÄUSERN. By Obergeneralarzt Dr. Thel, Inspekteur der S. Sanitätsinspektion. Second Edition. Paper. Price, 6 marks. Pp. 170, with 88 illustrations. Berlin: August Hirschwald, 1914.

The title of this book indicates that the author is attempting to set forth the principles to be used for the planning and construction of hospitals. It is illustrated with a number of plans of existing institutions and detail plans of operating departments and isolation buildings. The larger plans illustrate German military hospitals which do not contain arrangements of particular value to Americans. The work begins with an interesting history of hospitals. It contains a number of tables in regard to the number of hospital beds in European cities, the cost per bed of many well-known hospitals, areas of buildings per bed, the division for different services and other statistical matters, all of which are taken from larger works such as "Das Deutsche Krankenhaus" by Prof. Dr. Grober; but those who do not possess this work will find the smaller one helpful and reasonable in price. The book does not treat of the management or organization of hospitals and is intended more as a guide to builders. Inasmuch as the author is not an architect or builder his advice in regard to building matters is not technically correct in many instances, and is also incomplete. The illustrated method of deafening floors cannot be used in this country. Some recommendations appear unusual to Americans; for instance, "gas-pipes are to be placed on wall and ceiling surfaces. They are not to be placed within the mason work, so that leaks can be found easily and repairs made quickly." This does not speak well for German pipe installations, for such troubles are exceedingly rare in American cities.

Two statements by Dr. Thel appear particularly noticeable, namely: "Building good hospitals without possessing great experience is not possible in this specialty." "The experience frequently employed by communities in appointing commissions for the building of hospitals, who may make an inspection trip for the purpose, but who have little experience in this field, is a poor method to proceed with the construction of a hospital." The author also calls attention to the necessity of the proper attention to ventilating apparatus by saying, "The help and nurses must be fully instructed in regard to the ventilating apparatus in order that it obtain proper attention and good operative results; the help and nurses must be watched continuously in this matter." That the Germans persist in their contention that hospitals should not have many stories is shown by Dr. Thel's statement that a height of two stories should be exceeded only in exceptional cases.

DIAGNOSTIC SYMPTOMS IN NERVOUS DISEASES. By Edward Livingston Hunt, M.D., Instructor in Neurology, College of Physicians and Surgeons. Cloth. Price, $1.50 net. Pp. 229, with 54 illustrations. Philadelphia: W. B. Saunders Company.

This was written to supply the demand for a manual containing the salient points and leading symptoms of the principal nervous diseases without the laborious search involved in consulting larger text-books. The author has carried out his purpose admirably, and has furnished in a concise, yet readable and entertaining manner, a complete cross-index, so to speak, to the regular text-books. All important symptoms and signs are taken up, with the methods of eliciting them, and a list of the diseases in which they are encountered. The constant use of such a book will enable any physician with a reasonable knowledge of the fundamentals of neurology to avoid errors and to make his own diagnoses correctly in a great many cases which he otherwise could not disentangle without a consultation with a specialist.

This little book, together with one standard text-book, will meet the every-day needs of the student and practitioner better than a whole shelf of large works.

DISEASES OF CHILDREN. A Manual for Students and Practitioners. By John McCaw, M.D., R.U.I., L.R.C.P., Senior Physician, Belfast Hospital for Sick Children. Cloth. Price, $3.50 net. Pp. 524. New York: William Wood & Co., 1914.

This is an effort to put the subject of diseases of children in such a form that busy practitioners and medical students will grasp it readily and be encouraged to go further in the study of pediatrics. It appears to be an eminently fitting book. While the subject-matter is condensed, it is well systematized and the important points are well brought out. More than any other book which has come from the British Isles, it shows a definite knowledge of the work which has been done by Americans and gives full credit for it. The chapters on infant feeding are well written, and while no attempt is made to recommend methods, many are described properly and the practitioner left to take his choice. The chapters on diseases of the respiratory tract, are especially complete and practical.

DIAGNOSTIC METHODS. A Guide for History Taking, Making of Routine Physical Examinations and the Usual Laboratory Tests Necessary for Students in Clinical Pathology, Hospital Interns and Practicing Physicians. By Herbert Thomas Brooks, A.B., M.D., Professor of Pathology, University of Tennessee, College of Medicine, Second Edition. Cloth. Price, $1. Pp. 82. St. Louis: C. V. Mosby Company, 1914.

Laboratory methods are clearly described in this convenient handbook and so far as a somewhat thorough investigation has shown, it is reliable.

Miscellany

Combined House and Office for the Physician

In *Suburban Life*, for May, Charles Vaughan Boyd discusses the building of a distinctive type of combined residence and office for the physician. Generally speaking, the house is composed of two units, represented by the family

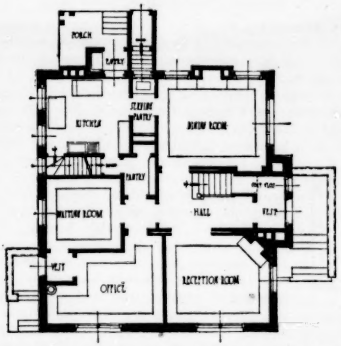

Fig. 1.—Combined house and office at Hamilton, Canada. For description see text.

quarters and the service department. In a physician's residence, three units are necessary on account of the requirements of office space. In planning such a residence for the physician, care must be taken not to place undue emphasis on any one portion. The pleasure of the family cannot be ignored in locating the living-rooms, nor can the welfare of the servants be overlooked. It is also not wise to relegate to inconspicuous position the rooms actually devoted to the

Fig. 2.—Residence and office at Ambler, Pa.

physician's office. It is therefore believed that the best location for such a residence is at the intersection of two streets. By this procedure, the house gains in two important details: First, there is assured an abundance of light and air. Second, there is provided an equally desirable position for the family entrance and the office entrance.

Figure 1 represents the ground floor of a physician's house in Hamilton, Canada. It is located on a corner, the house and the office being entered from different streets. The office entrance, it will be seen, is not at the front of the house. A small vestibule serves as means of communication with both the waiting-room and the office. Each of these rooms is also connected with an inner hall which, in turn, is connected with the living and service quarters. In this plan, only two rooms are allowed for the office, the waiting-room and the consultation-room. The plan, however, is very compact and permits of a convenient arrangement of the living-rooms. In this house, a large living-room is provided on the second floor, which overlooks the intersecting streets.

Figure 2 is the plan of a residence and office at Ambler, Pa. It represents the remodeling of an old house, the office wing being added. It has a separate office entrance at the front of the house. The plan as a whole, if not particularly well balanced, affords a convenient arrangement of the office which consists of waiting-room, consultation-room and laboratory with a separate hallway running the length of

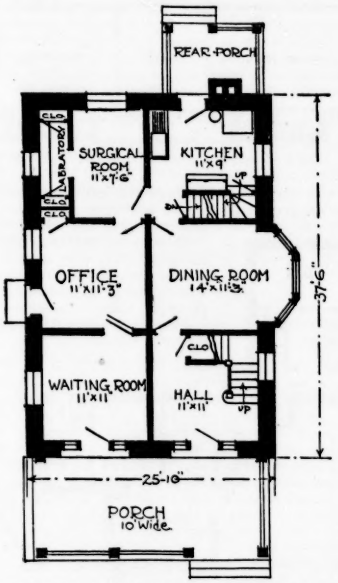

Fig. 3.—Combined office and house at Fort Washington, Pa.

all these rooms and affording entrance to the kitchen. The office hall communicates with the reception hall of the residence. The hall running the entire length of the office rooms permits patients to leave the consultation-room without reentering the waiting-room.

Figure 3 represents a Fort Washington, Pa., house, showing the office and residence portion well isolated in a plan of small area. The office portion has three conveniently arranged rooms, the waiting-room in front, consultation-room next, and surgical-room at the rear which connects with the kitchen. The surgery also has connected with it a laboratory. Plenty of closet room is provided in both consultation-room and surgery. This office does not allow of the exit of the patient without going through the waiting-room, but slight changes in the plan would remedy this. In this plan the living-room would again have to be placed on the second floor, as only hall, dining-room and kitchen are provided for on the first floor.

Figures 4 and 5 represent arrangements which would prove convenient for houses fronting two streets. Only two rooms are provided for office purposes. In these plans the living-rooms are all on the first floor, which, of course, necessitates a larger house.

Figure 6 is the plan of a large house at Melrose, Pa. The feature of this plan is the reception hall between the waiting-room and the office, which would perhaps afford greater privacy in the consultation-room but less convenience in the handling of patients. The kitchen is placed back of the office rooms, and in the dining-room must be entered through a pantry which is more or less desirable according to the point of view. This is an elaborate and expensive house. The office and residence portions are well isolated.

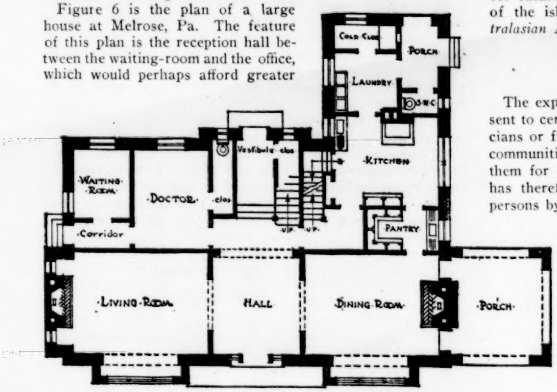

Fig. 4.—Example of combined house and office at St. Martins, Pa.

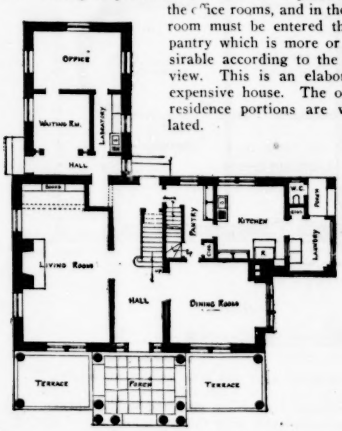

Fig. 5.—A combination at Cynwyd, Pa.

Cultivation of Camphor in Formosa

The staple industry of the island of Formosa is the cultivation of camphor, the exports of which during 1912 advanced from 6,613,700 pounds, worth £354,100 ($1,720,926), to 8,649,300 pounds, worth £553,600 ($2,690,496). The principal importing countries were the United States, with 2,370,300 pounds; Germany, with 2,243,400 pounds; Japan, with 1,694,000 pounds, and the United Kingdom, with 1,003,000 pounds, while France, India and Austria also took considerable quantities. In view of apprehension as to gradual exhaustion of camphor forests in Formosa, considerable afforestation schemes are under way. From 1913 about 3,000 acres annually for twelve years are to be planted with young trees; the cost for the first year is placed at about £11,800 ($57,348). The development of the mountainous interior and the gradual subjugation of the savage territory are stated to have disclosed new camphor districts which are being carefully investigated and preserved for future use. It is considered that the camphor resources of the island will be equal to all future demands.—*Australasian Med. Gaz.*

Indigent Consumptives in the West

The expense and the care of poverty-stricken consumptives sent to certain portions of the West and Southwest by physicians or friends is a heavy burden on the taxpayers of those communities. Many arrive with insufficient funds to support them for even a short time and become public charges. It has therefore been proposed to provide hospitals for such persons by federal legislation. A bill is now before congress known as the Shafroth-Callaway bill which provides for the use of abandoned military reservations and other government property in the Southwest as hospitals for such patients. These are to be operated under the direction of the United States Public Health Service. The bill also provides that the tuberculosis hospital at Fort Stanton, N. Mex., may be used for the care of consumptives who have contracted their infection in another state and are a menace to interstate commerce. As an indication of the burden these cases may become, it was found that in one Texas city during twenty years there were 6,959 deaths from tuberculosis, and 33 per cent. of these persons had been residents of the city less than six months, and a much larger percentage residents less than three years. As an amendment to the Shafroth-Callaway bill it has been suggested that a certain percentage of the cost of maintaining an indigent consumptive should be charged against the city or county from which he comes. This would discourage sending such patients away as could be cared for more cheaply and as well at home. It would also stimulate the establishment of local hospitals.

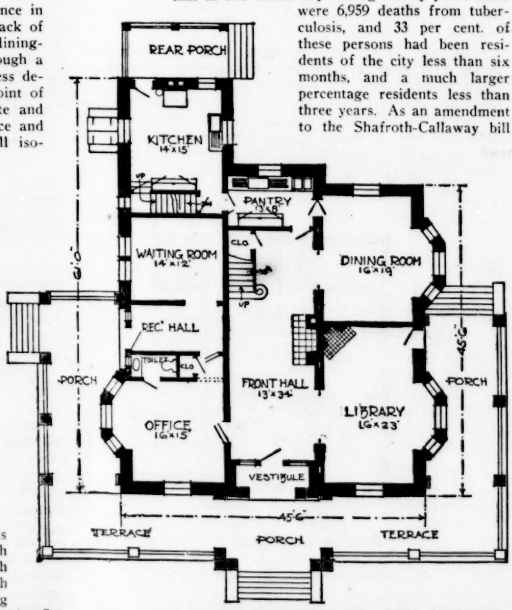

Fig. 6.—Elaborate combined residence and office at Melrose, Pa.

Medicolegal

No Evidence of Malpractice in Treatment of Eye

(Phebus vs. Mather (Ill.), 181 Ill. App. 274)

The Appellate Court of Illinois, First District, affirms a judgment for the defendant in this action for alleged malpractice in the treatment of an eye. The court says that the plaintiff testified that, after her right eye had been a little inflamed for three or four days, which she attributed to a cold, and she had got a cinder or something in her left eye, she went to the defendant's office, after which the eye continued to get rapidly worse; that he scraped around it with a wooden toothpick, and two days later he told her she must go to the eye and ear infirmary. She also testified that on the occasion of the use of the toothpick her mother had said to the defendant that if he did not think he could cure the eye she would send the plaintiff to a specialist, to which the defendant replied that it was nothing serious and that he knew his business. The defendant, on the other hand, testified that the first time he saw the plaintiff's eye he advised her to go to a hospital, it being apparent that she was suffering from purulent ophthalmia, caused by a gonorrheal infection. It also appeared from the evidence that at that time the plaintiff's husband was suffering from gonorrhea. The law seems to be well settled that in order for the plaintiff to recover in a case of this character it is incumbent on him to prove that the treatment administered by the defendant was negligent or unskilful, and also that the alleged injuries were the result of such treatment. The general rule also is that mere proof that a good result was not obtained is, of itself, no proof or evidence of negligence or lack of skill, of which, and of the fact that the injuries complained of resulted therefrom, there must be affirmative proof. Usually, and especially in eye cases, such proof can be established only by the testimony of experts skilled in the medical profession, and cannot be made by lay witnesses. Nor does the court think that a question for the jury was raised by the testimony of the physician who treated the case at the infirmary, that he thought there would have been a better chance had the case come earlier under his care, but he did not know whether the eye could have been saved. To permit a jury of laymen to speculate as to what result that "better chance" might have produced was clearly improper, especially in view of the expert physician's statement that he had no opinion on that subject. There was no competent testimony tending to show either negligence in the treatment by the defendant, or that the injury complained of was the result of such negligence.

Compensation for Volunteered Emergency Services

(Schoenberg vs. Rose (N. Y.), 145 N. Y. Supp. 831)

The Municipal Court of the City of New York, Borough of Manhattan, Sixth District, says that during the trial of an action against a corporation the president thereof while testifying fell from his chair unconscious. The plaintiff in this case, a physician making a specialty of treating the eyes, ears, nose and throat, being in attendance as a witness for the other side, volunteered his services, and, with another physician similarly present, sought to restore respiration, but finally pronounced the man dead. The president left a large estate, and each of the physicians presented a bill for $500, but the court adopts the value placed on the plaintiff's services by the executors' experts and gave him a judgment for $15, which it considers the reasonable value of such services, the latter not being difficult.

The court says it is of the opinion that, while the financial condition of a patient does not alone affect the abstract question of the value of a physician's services, it is a proper element entering into the question as to what charge or what reduction in the charge shall be made by him by reason of such financial condition. So a patient of no means, or of limited means, may prove that his circumstances and station in life are such as to render a physician's charge exorbitant and out of all reason and proportion to the patient's ability to pay, while the same charge to a person of large means would not be considered unreasonable. The financial condition of a patient is an element that it may be assumed is considered by both physician and patient when the services are contracted for, rendered, and accepted, and may also be considered by the court in determining the reasonableness of the charge; and that element should apply to a case in which there is and was no contract, but a mere fiction of law creating one, else, in a case where services are rendered to an unconscious man who never recovers, the charge against his estate might be so great and unreasonable as to be out of all proportion to the value of the estate.

This court is unable to draw a distinction as to the right of recovery between a case in which the physician is called by a stranger or spectator and one in which he proceeds to treat a person while unconscious, or *in extremis*, without being asked to do so. The right to recover in both cases is the same, and the argument to support such right could be carried to great length. In the court's opinion there is an implied contract in both cases, and, if the physician chooses to stand on his legal rights to recover, he is entitled to enforce those rights and must receive what his services are reasonably worth, regardless of what may be considered the ethics of the medical profession in such a case, with which the court is not concerned. When duty requires the physician to give his aid, and he has given it, he may expect payment by reason of the promise created by law from the patient to do so, although the patient never asked for the aid or consented to it being given. In an emergency case, requiring immediate attention to save life, the physician when called, or when he volunteers his services, shou'd not stop to inquire by whom he will be paid, or to make it known that he expects to be paid. It would be inhuman to do so or to give the subject a thought. Offering his aid does not establish the fact that he intended his services to be gratuitous. Whether or not he did offer aid is a question of fact.

Authority for Physical Examination Does Not Include Taking of Roentgenograms

(Lasher vs. S. Bolton's Sons (N. Y.), 146 N. Y. Supp. 321)

The Appellate Division, Third Department, of the Supreme Court of New York, reverses an order directing the plaintiff, a female infant, who was seeking to recover damages for personal injuries, to submit to the taking of a roentgenogram of her right foot. The court says that the plaintiff, through her attorney had consented that a physician might make a physical examination of the foot in behalf of the defendant, and later the order reversed was granted. The court is clearly of the opinion that there is no foundation in law for the order. The examination of witnesses before trial is purely statutory, and authority for a physical examination of a party to an action does not include authority to take photographs or roentgenograms, especially when the defendant has already, by consent of the plaintiff, had the advantage of a physical examination. The general purpose of the statute was to change the rule of the common law, and under well-established rules the authority is not to be extended beyond the clearly expressed intention of the statute. The statute expressly provides that, in the event that the person to be examined is a female, she shall be entitled to have such examination before physicians or surgeons of her own sex, and this rule is not limited to adult females but applies to all females. The order here under consideration simply directed a particular physician, a man, to take a roentgenogram of the plaintiff's right foot, though it appeared from the record that the physician was not a roentgenologist, and the order seemed to contemplate that it should be actually taken by some other person, for it was to be done under the direction of this physician, who was not authorized under the rules of practice to act as a referee, and who had, according to the language of the order, "already made a physical examination of the infant plaintiff for and on behalf of the defendant."

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, JUNE 22-26.

American Academy of Medicine, Atlantic City, June 19-21.
American Climatological Association, Atlantic City, June 19-20.
American Gastro-Enterological Association, Atlantic City, June 22-23.
American Laryn., Rhin., and Otol. Society, Atlantic City, June 19-20.
American Orthopedic Association, Philadelphia, June 18-20.
American Proctologic Society, Atlantic City, June 22-23.
American Urological Association, Philadelphia, June 18-20.
Conf. of State and Prov. Boards of N. America, Washington, June 19-20.
Montana State Medical Association, Lewistown, July 8-9.
New Jersey Medical Society, Spring Lake, June 29.
North Carolina Medical Society, Raleigh, June 16.

AMERICAN DERMATOLOGICAL ASSOCIATION

Thirty-Eighth Annual Meeting, held in Chicago, May 14-16, 1914

(Continued from page 1839)

Purpura Annularis Telangiectoides

DR. GEORGE M. MACKEE, New York: This affection attacks young male adults, although two cases have been noted in infants. The eruption is always situated on the anterior and lateral surfaces of the lower limbs, below the knees, with occasional lesions above the knees and on the arms, and very rarely on other portions of the body. The appearance of the eruption is nearly always preceded by rheumatic pains. Otherwise there are no subjective symptoms. The disease is divided into three fairly well-defined stages: first, telangiectatic; second, purpuric and pigmentary, and, third, atrophic. Regarding the differential diagnosis and etiology, many cases give a positive tuberculin reaction, but at the same time many do not. Inoculation experiments have been negative. These facts, together with the clinical and histologic pictures, would seemingly rule out the possibility of tuberculosis. Occasionally, in syphilis, an annular purpuric rash is present, which is due either to the syphilis or possibly to the mercury. This eruption is usually limited to one small area, is evanescent in character and disappears without atrophy and with temporary pigmentation. The etiology of the disease is unknown, but is thought to be either a neurosis or a reaction to some toxic substance. It can be differentiated from any known dermatosis, and is undoubtedly an entity.

DISCUSSION

DR. A. SCHALEK, Omaha: Whatever this skin disease may be, I certainly do not think the name purpura a good one. It does not agree with any of the characteristics of purpura as we know them.

DR. A. RAVOGLI, Cincinnati: It is a beautiful thing to place new names and to try to designate diseases of rare quality by these new names, but we must remember, too, that we have acne necrotica and tuberculids, but whether they have just the same formation of pustule with resulting scar as that described by Dr. MacKee, I do not know.

DR. W. H. MOOK, St. Louis: I have seen four or five of these cases in the last seven years, and placed them under the classification of atrophic dermatosis of unknown origin. One of the cases had quite an ulceration, about the size of a dime, that existed for something like two years, and refused to heal up with any sort of treatment.

DR. M. F. ENGMAN, St. Louis: My attention was first called to this condition several years ago by Dr. Mook, and since then I have seen several cases and have called them "Mook's disease." Then, in looking over the literature about six or eight months ago, I came across some articles about this disease. Most of the cases reported in the literature occurred in railroad men and those who were on their feet a great deal.

The Abderhalden Technic as Applied to the Diagnosis of Syphilis

DR. H. R. VARNEY, Detroit: From seventy-five cases examined experimentally the following conclusions are drawn: The specificity of the Abderhalden technic applies to syphilis. Syphilitics have in their blood-serum enzymes which react with the protein of the organism. Tissue derived from active human lesions is more specific than syphiktic tissue of the rabbit. Mixed infection in the human lesion gives rise to error, as shown in our cases of sinus disease, furunculosis, etc. Further work will be required to determine whether all syphilitics have the power of developing ferment, and at what stages of the disease the test is present or absent. We believe that polyvalent antigens prepared from several strains of pure culture of the spirochete offer the best hope for further success with this technic. The degree of success with the test varies in proportion to the care and precision exercised in its execution.

DISCUSSION

DR. UDO J. WILE, Ann Arbor, Mich.: I have undertaken some experiments with the Abderhalden technic in another condition this year, and it was a most difficult technic to carry out. At least, I found it so. The specificity of the spirochete antigen is extremely interesting, in view of the specificity of the test in this as well as other diseases.

DR. H. R. VARNEY, Detroit: The Abderhalden technic is easy as compared with the original Wassermann, in my opinion.

A Study of the Spinal Fluid with Reference to Involvement of the Nervous System in Secondary Syphilis

DR. UDO J. WILE and DR. JOHN HINCHMAN STOKES, Ann Arbor, Mich.: A large proportion of all patients in the secondary period of syphilis, in our series 63 per cent., showed evidences in the spinal fluid of the involvement of the central nervous system. From the special examinations made, we must conclude that this does not represent the whole number who will at some time show, or who have already shown, a reaction on the part of the central nervous system. The absence of findings indicative of meningeal reaction in a single examination cannot be taken as conclusive evidence of freedom from central nervous involvement. Any of the findings, lymphocytosis, increased albumin and globulin content and positive complement-fixation test, may be present alone or in varying combinations, and each indicates involvement of the central nervous system. Comparing this high ratio of early involvement with the relatively low ratio of later involvement, as compared with the total number of syphilitics, we must conclude that the early involvement is mainly a transitory manifestation. The central nervous system is particularly likely to show involvement in cases in which the eruption is papular or follicular in type. Marked subjective symptoms, such as headache, insomnia and nervous irritability, were usually accompanied by positive findings in the fluid in our series. In a general way, cases in which there had been little or no treatment showed a higher percentage of involvement than those in which vigorous treatment had been inaugurated. Involvement of the central nervous system was found in a relatively high percentage of those cases in which the general health was considerably affected. The commonest finding indicative of meningeal reaction was the increased globulin and albumin content, the positive Wassermann ranking next, and lymphocytosis last. As an aid to diagnosis and as a possible guide to prognosis, the value of the spinal puncture in cases of secondary syphilis can scarcely be overestimated.

DISCUSSION

DR. J. A. FORDYCE, New York: I have for a long time been convinced that there are various strains of the spirochete, and that there is a strain that has a special predilection for the nervous system. Dr. Nichols of the Army Medical School of Washington has recently published a very suggestive article on a strain of spirochete that has a given infective power. He has studied the biologic characteristics of this organism, and I think has pretty definitely shown that there is a spirochete which has a predilection for the nervous system. The majority of neurologists believe that there are not more than from 5 to 10 per cent. of

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syphilitics who show involvement of the nervous system. If a larger percentage than that show involvement in the early stage of the disease, as Dr. Wile has said, it must be a passing infection, a hyperemia of the meninges, which passes off. I have been making a study of the spinal fluid in late syphilis, in tabes, paresis and various forms of cerebrospinal syphilis for the past two years, but in the last three or four months I have examined the spinal fluid in about thirty cases in various stages of the secondary period of the disease, for the globulin content and lymphocytosis, as well as for the Wassermann reaction. I started out firmly convinced that we should find from 40 to 50 per cent. of involvement of the nervous system, but to my surprise have found it considerably smaller than that. Repeated punctures should be made in the same case, as the fluid may be negative this week, and a month later positive. We should make the examination in the later period of the secondary stage, and especially after treatment with salvarsan. One, two or three injections of salvarsan are apt to develop a latent reaction in the fluid, and you are more apt to get changes after the patient has been under treatment for some time.

DR. J. F. SCHAMBERG, Philadelphia: Dr. Wile's studies show us with what frequency the nervous system is involved, often at a very early stage of the infection. It is necessary to study not only the blood in these cases, but also the cerebrospinal fluid, in order to prevent later disastrous results affecting the nervous system.

DR. UDO J. WILE, Ann Arbor, Mich.: I think, as Dr. Fordyce says, that most of these nervous conditions are transitory phenomena, and that for the most part energetic treatment directed to the general syphilis serves to clear up the syphilis of the central nervous system. It is impossible to say just how many of these cases in which the cerebrospinal system is early involved become our late cases of tabes and paresis, or as to whether or not they fall into this group. It is highly probable that of this number 5 per cent. are drawn from these cases of early involvement.

The Use of Calcium Lactate in the Treatment of Certain Dermatoses

DR. CHARLES J. WHITE, Boston: Believing that calcium had shown decided curative powers in certain instances, I decided to make a thorough therapeutic trial of the drug. I have prescribed calcium in many different conditions, but by elimination of the unsatisfactory tests the final trials have been limited to the following diseases and conditions: hyperhidrosis, pernio, herpes simplex, erythema multiforme, urticaria, livedo, purpura and angioneurotic edema. In addition to the calcium salts, patients have been asked to partake as freely as possible of food rich in calcium, and have been urged to avoid raw fruits and all acid foods, for it has seemed to me that many persons suffering from the suspected diseases have been large consumers of these articles of diet. External treatment has been prescribed in all cases, a factor which vitiates the scientific value of the whole work, but it must be borne in mind that most of these patients were referred by general practitioners who had been unsuccessful in previous treatment, and, furthermore, that these patients were mostly wage-earners who deserved as speedy restoration to health as was possible. Also, the work was necessarily hampered by the fact that all these patients were ambulants, who obey or break laws as the spirit moves them. In summing up my experiments, I think it seems fair to state that calcium is certainly not a specific for any of the diseases mentioned in any sense of the word, but it is a drug which may render distinct and most welcome service in any one of them, and a drug which should always be tried in obstinate examples of the conditions above cited.

DISCUSSION

DR. W. A. PUSEY, Chicago: Ever since Wright began to hypnotize us with his fascinating theory, I have been interested in the coagulation time of the blood and the use of calcium salts in the conditions suggested by Wright. I have made it a plan for many years in cases of such intoxications as urticaria, erythema multiforme, purpura and chronic eczemas to make a routine coagulation-time test, and I first became disappointed in that. I have never been able to make out any distinct characteristic relationship between the coagulation-time and the occurrence of any of these conditions, so that I had no delayed coagulation-time as a basis on which to use calcium salts. I used calcium salts for many years in the intractable cases of this sort, especially urticarias, erythema multiforme and intractable eczema, and then let it fall into disuse. Then I took it up again, and must confess to having had practically no evidence of its value. I first used calcium chlorid and later calcium lactate. If Dr. White, however, who is such a careful observer, has found calcium lactate useful in such an intractable condition as hyperhidrosis, I am going to try it again.

DR. M. B. HARTZELL, Philadelphia: I have tried the calcium salts extensively, and regret that I have yet to see a single instance in which I thought my patient had been benefited in the remotest degree. Still, one man's experience does not count for very much, and I shall take renewed courage and try it again.

DR. D. W. MONTGOMERY, San Francisco: I have given calcium lactate in a very interesting case of erythema multiforme due to the *Bacillus coli communis*, and obtained no appreciable amelioration of the symptoms. I have not tried the drug in hyperhidrosis, but I should think, from the vast number of causes of hyperhidrosis, that it would be problematic if it would do good; but it is all a chance, and we might do good by using it.

DR. DAVID KING-SMITH, Toronto: Calcium lactate has been tried in various conditions in the hospital with which I am connected, not only in dermatologic cases, but others as well, and I think I may say that it has been rather disappointing. Probably the best results are obtained, however, when the drug is given in 20-grain doses three times a day, for two days, then stopped for two days, and then repeated for the six doses; if it is going to do any good, as a rule, it will have done it then.

DR. CHARLES G. WHITE, Boston: I have also had a good many failures in the use of this drug, but have had better success than those who have discussed my paper. I do not think the giving of the calcium lactate is the whole thing. You must cut out the acids and give foods that contain calcium, and, above all, you must stop the use of magnesium at the same time. The two drugs are opposed in their results, and many failures have come because you are giving magnesium to clear up the bowels, and calcium with the idea of curing the disease. They neutralize each other and you get no effect.

(To be continued)

NEW YORK ACADEMY OF MEDICINE

Meeting Held April 16, 1914

The President, DR. WILLIAM M. POLK, in the Chair

Medical Aspects of Treatment of Pyloric Stenosis in Infancy

DR. L. EMMETT HOLT: In my series of 57 cases, 52 were breast-fed infants; of these 40 had nothing but the breast and 12 had mixed feeding. Hence bad feeding can scarcely be invoked as a cause of this condition. Of 55 cases in which the sex was noted there were 49 males and 6 females. The mortality was 55 per cent.; 28 patients were operated on, with 14 deaths; 29 cases were treated medically, with 17 deaths. The whole crux of the question between medical and surgical treatment of pyloric stenosis seems to be: Are the symptoms and condition such as to make it probable that the patient will or will not live long enough for the pathologic condition to subside? There are medical as well as surgical risks. The indications for operative treatment are (1) no diminution of the vomiting or the gastric peristalsis by stomach washing and diet; (2) a steady loss of weight of 1 or 2 ounces a day; (3) marked gastric retention;

and (4) absence of fecal stools. My greatest regret is that operation was delayed in so many of my cases and in some was not done at all. To persist with medical treatment week after week when forcible vomiting and marked peristalsis persist and when the weight shows only a slight loss, seems to me to be incurring far greater risk for the child than with operation.

Pyloric Stenosis in Infancy Treated by Gastro-Enterostomy

DR. WILLIAM A. DOWNES: My series embrace 21 cases, 16 males and 5 females. Seventeen were breast-fed entirely; 3 were partly breast-fed and partly bottle-fed, and 1 was bottle-fed. A typical posterior gastrojejunostomy was done in all the cases. I offer the following conclusions: 1. Hypertrophic pyloric stenosis is congenital to the extent that there is an increase in the thickness of the circular muscular fibers at the pylorus. The presence of this thickened muscle-fiber reduces the lumen of the pylorus; therefore, the stomach in order to empty itself contracts more forcibly than normal. This soon causes the mucous membrane to become thickened and edematous, and to assume a more or less spiral arrangement as it passes through the narrowed pyloric channel of from ½ to ¾ inch. The result is a valvular action which gradually produces complete closure of the pylorus. The question as to whether or not the pylorus will admit a probe or catheter at operation or necropsy is of little consequence when weighed against the clinical evidence of complete obstruction. 2. There can be no doubt that there is sufficient time between the onset of symptoms and the appearance of complete obstruction for careful observation and the carrying out of any medical measures likely to prove of benefit, provided, of course, that the early symptoms have been properly interpreted. The fear, however, that the condition may have existed longer than has been suspected, and that the vitality of the baby is not so good as appearances would lead one to believe, make me feel that operation is indicated in every case of hypertrophic stenosis as soon as the diagnosis is made. Should depression or early evidence of shock be present, immediate operation is demanded. 3. The babies coming to operation in good condition suffer little or no shock, their convalescence is straightforward, and they are at once restored to normal health. My experience in this respect corresponds with that of other operators.

DISCUSSION

DR. CHARLES L. SCUDDER, Boston: It has been demonstrated that the medical treatment by feeding and by drugs in true cases of tumor stenosis has not been satisfactory. If there is a true tumor present, the sooner surgical measures are instituted the better for the immediate condition and the better for the future of the baby. Cases of stenosis not due to tumor are supposed to be occasioned by a certain degree of pyloric spasm. The tumor cases of obstruction are real mechanical obstructions. The tumor occludes the lumen of the pylorus, and it is probably of congenital origin. Quite recently there was reported one case of a new-born baby in which there was a congenital pyloric tumor. This fact is of considerable importance in the proof of the congenital origin of this tumor. The contrast between the rapid improvement in weight, in general appearance, in growth, and in general development in the cases of pyloric tumor operated on and those cases experimented on by feeding and drugs is so great that one can hardly understand the attitude taken by certain medical practitioners who advocate long experimental feeding in true tumor cases. When the diagnosis of congenital pyloric stenosis is made in these little babies, the earlier surgical measures are instituted the more rapid will be the recovery from the emergency starvation and the more sure will be the saving of the life of the child. Children with only partial obstruction will develop symptoms later than those with more complete obstruction. Children with almost complete obstruction will demand surgical interference earlier than those with less obstruction. In the group of cases in which the diagnosis is doubtful, that is, in that group of babies difficult to feed, it will always be justifiable and proper to experiment for a limited time with skilled feeding in order, if possible, to arrive at a satisfactory diagnosis. I believe that comparatively few cases of so-called pyloric spasm without the presence of a true tumor will require surgical treatment.

DR. HENRY KOPLIK: There are patients who will recover without operation. Patients with a hard palpable tumor should be operated on as soon as possible. Peristalsis is not an indication for operation; many patients have peristalsis and recover without operation. In others there is peristalsis long after recovery. Some cases present marked peristalsis and are very mild in their course. On the other hand, the amount of stenosis is very important as well as the knowledge of just how much food passes through the pylorus into the duodenum. When no great amount of food passes through the pylorus, the sooner the operation the better. I do not agree that all cases should at once be handed over to the surgeon.

DR. H. M. RICHTER, Chicago: Could we agree as to the underlying pathologic condition it would be easier to decide what course to pursue. Among my 24 cases, 19 were diagnosed before operation as hypertrophied pylorus with resulting obstruction, and in 5 cases the diagnosis before operation was spasm. Of the 19 cases, 18 showed a palpable tumor before operating. In the 19 cases there was in each a definite fixed hard tumor. In 5 cases a diagnosis of spasm was made on the basis of the peristaltic waves of the stomach and the starvation stools. The underlying pathologic condition, however, is surely quite different from that found in the cases showing hypertrophy, and probably does not constitute an entity, but is variable. There is a definite intestinal obstruction in the true hypertrophic cases. The mortality of gastro-enterostomy is high, but it is being gradually lowered. The results published show that the death-rate is being lowered continuously. Operative treatment, carried out sufficiently early, enables the breast-fed infants to be saved. The duration of treatment in the non-surgical cases is prolonged, and in a large proportion of these cases the mothers lose their milk.

DR. HOWARD LILIENTHAL: I have noted that the location of the tumor in these infantile cases is exactly at the pylorus. The pyloric veins appear at or near the central part of the mass. I have operated in five cases. Two patients died, one from hemorrhage following operation on the mastoid which had to be performed three days after the gastro-enterostomy, the other from some error in technic which resulted in a breaking down of the wound.

DR. LINNAEUS E. LA FETRA: My personal experience with this condition comprises fourteen cases. They can be divided into two groups: (1) those in which spasm alone, or spasm with more or less hypertrophy, is a prominent factor; and (2) those with spasm and hypertrophy in which the hypertrophy is or becomes the most important factor. It is altogether possible that the cases change from one group to the other, the long continuance of the spasmodic attacks inducing an increase in the hypertrophy. In all the severe cases more or less hypertrophy is present. Also it is probable that the presence of an original hypertrophy which might be small in amount results in spasm which increases the hypertrophy. Of the cases in the first two groups, those of spasm alone or spasm with some hypertrophy, there were eight patients. All of these recovered without operation except one. The one patient that died had a severe spasm with marked peristaltic waves, but no tumor. Necropsy showed a normal pylorus. Of the cases in which hypertrophy was the prominent feature I have had six; five of these patients were operated on and four died. I should consider that operation is absolutely indicated as the only hope for recovery in all cases in which hypertrophy is the prominent feature.

DR. ELLSWORTH ELIOT: I think we are all agreed that irrespective of pathologic conditions the cases can be divided into three groups: (1) cases which are mild in their course and amenable to medical treatment, and which are under the care of the pediatrician; (2) the hopeless cases that come to

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the surgeon in the later stages of the disease; and (3) the doubtful cases in which one is undecided as to the propriety of continuing the medical treatment or resorting to surgical measures. I am quite willing to depend on the pediatrists and to be guided by their advice.

DR. ALFRED F. HESS: I have seen about twenty cases of spasm of the pylorus. We have to deal with two groups of cases: (1) organic stenosis with tumor; and (2) functional stenosis. Organic stenosis is of congenital origin. In the fetus the pylorus is large and forms a very great part of the stomach, greater than it does in infancy. If one looks at the picture of the pylorus of the fetus, one is reminded of pyloric tumors. The only way to settle this question is to find these cases in dead-born children, to find instances of pyloric tumors. We should examine the dead-born children more carefully if we wish to solve this problem. Some patients die within one or two weeks, although the operation was successful. I think that this is due to overfeeding, to alimentary intoxication. If a gastro-enterostomy is performed and a large amount of milk is fed into the intestines, alimentary intoxication results, with fever and death.

DR. MAX EINHORN: I have had four cases of congenital stenosis of the pylorus in infants, and success was attained in two of them by stretching the pylorus. This method deserves to be used more. The stretching was performed in all four of my cases. In two patients there was a real stenosis and not a spasm and successful results followed this stretching of the pylorus. In two of the cases the results were just as good as could have been obtained by surgical measures. After the stretching the stomach began to be emptied and the children began to improve. These were cases of pyloric obstruction. In two cases I succeeded in stretching the pylorus, but the patients died. There was no stenosis but rather a spasm. Stretching was done in these two cases, but without the desired results.

DR. WILLIAM A. DOWNES: No surgeon, whether urged by a pediatrician or other medical adviser, would attempt to operate in pyloric stenosis in infants on the basis of tumor and peristaltic wave alone. Data from every point of view should be had before resorting to operative interference.

ASSOCIATION OF AMERICAN PHYSICIANS

Twenty-Ninth Annual Meeting, held at Atlantic City, N. J., May 12 and 13, 1914

(Concluded from page 1838)

The Inspiratory Exaggeration of the Dicrotic Wave in Pericarditis

DR. ALBERT E. TAUSSIG, St. Louis: Ordinarily, the dicrotic wave in the radial sphygmogram does not vary in size with the phase of respiration. In pericarditis, however, it becomes more or less exaggerated, sometimes greatly so, during inspiration. In all of five cases studied from this point of view, the phenomenon was observed. Anatomic considerations render its occurrence readily explicable. It may have diagnostic significance.

The Influence of Benzol Inhalations on Experimental Pulmonary Tuberculosis in Rabbits

DR. WILLIAM CHARLES WHITE, Pittsburgh, Pa: Benzol benzene, is the best solvent for the fat portion of the tubercle bacillus. It extracts a greater percentage of fat than any other single solvent will take from the bacillary substance. Because benzol can easily be vaporized and utilized as an anesthetic, it was thought possible in this way to dissolve the living tubercle bacillus after its entrance into the pulmonary capillary system by way of the ear-vein and before the formation of the tubercle. It was hoped in this way to obtain a solution of all the living portions of the tubercle bacillus within the body and the possible development of a retardation of the process produced by a fatal dose of tubercle bacilli and the establishment of an immunity to a further dose of the organism. Contrary to the desire expressed in the theory, I found that in every instance whether the infecting tubercle bacilli were of low virulence or of high virulence, the resulting infection in rabbits was very much more severe in those treated by inhalation of benzol than in those infected with the same weight of infecting organism.

The symptoms produced in rabbits by the inhalation of benzol were similar to those described by Sollmann for the inhalation of gasoline vapors. Animals may be given benzol inhalations, 5 c.c. every second day for periods up to three and even four weeks, without resulting in death. The resulting leukopenia varies very much. The lowest white-cell count was 3,800 per cubic millimeter. The red-cell anemia is very variable, the lowest in our series being 3,600,000 per cubic millimeter. The majority retained a normal red-cell count. The blood-smears and blood-counts exhibited changes similar to those described for the injections of benzol by Selling and others.

In all, thirty-three animals were used, twelve controls and twenty-one treated. The pathologic findings in many of these animals were very striking. In 30 per cent. of the treated animals, after receiving 5 c.c. inhalations of benzol every second day for three weeks, and then being allowed to live two or three weeks longer, extreme enlargement of the spleen was found. In one instance the spleen measured 13 by 3.5 by 3 cm., and the circumference of its largest part was 9.5 cm. There was a large hemorrhage in the substance of this spleen. In all twenty-one treated animals there was only a single case of purpura with hemorrhages into the mucous membrane of the stomach and bowel. There were marked fatty changes both in the liver and in the kidneys of the treated animals.

Some Relations of the Brain and of the Olfactory Apparatus to the Processes of Immunity

DR. HENRY SEWALL, Denver: Guinea-pigs sensitized to horse-serum may be desensitized by residence in a horse-stable. It is probable that this reaction may be rapidly achieved through the olfactory sense or more slowly by absorption through the respiratory membrane. The period of antianaphylaxis is of less than two days' duration. The converse of this, sensitization of normal guinea-pigs in stable-air, I have not been able to achieve. Removal of part of the brain of a sensitized guinea-pig produces much more severe shock than the same amount of injury in a normal animal. This shock is apt to be followed by a period of anti-anaphylaxis of short duration. Section of the olfactory nerves within the cranial cavity preceding the brain operation by a day or more abolishes the tendency to shock. Such nerve section in the normal animal also seems to reduce the shock arising from definite brain injury. [Depression of the olfactory sense through cocain and the resemblance of symptoms from poisoning with this drug to those of anaphylaxis are discussed]. The body as a whole may be sensitized through the peripheral application of horse-serum after a definite latent period which does not seem to be affected by previous general sensitization.

The Normal Amount of Diastatic Ferment in the Urine and Feces and Its Variation in Diseases of the Pancreas

DR. THOMAS R. BROWN, Baltimore: In healthy persons the diastase-content of the urine falls within quite definite limits. Markedly small amounts of this ferment in the urine, in the absence of renal changes, are suggestive, although not diagnostic, of pancreatic disease. The stool, if a rigorously exact method is carried out as to food (milk), purgative employed, preservation of specimen, estimation of ferment, etc., also furnishes a content within definite limits. Extensive carcinoma of the pancreas showed no diastase in the tube of least dilution in the method which I used, and this absence of ferment should prove of great help in the diagnosis of this condition. In chronic pancreatitis, diastase is present in the stool, but in markedly diminished amounts. In achylia gastrica the diastase-content of the stool was practically normal in all the cases examined.

Aconite as a Vasodilator

DR. WILLIAM HANNA THOMSON, New York: I regard aconite as the most efficacious vasodilator in chronic interstitial nephritis when given systematically in full doses. It at once reduces the blood-pressure, produces a full and compressible pulse, and greatly increases the percentage of the elimination of urea in interstitial nephritis. The most important action of aconite, when administered in interstitial nephritis, is to increase the elimination of urea. The beneficial effects of aconite are particularly pronounced in mental derangements of the nature of melancholia with high blood-pressure.

The Subcutaneous Administration of Oxygen as a Therapeutic Measure

DR. JOHN MCCRAE, Philadelphia: For the last two or three months I have used oxygen in this way, which I believe is the rational method of administering it and I believe that properly placed, it is useful. I employed it in a surgical case after a severe operation. The patient looked as though he might die in a short time. His respiration was 60; he had extreme edema of the lungs, extreme pallor, profuse perspiration, and signs of impending death. With repeated injections of oxygen the man recovered. I have used oxygen in thirty cases and believe it should be a part of the armamentarium of the surgical operating-room.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

May, CXLVII, No. 5, pp. 625-780

1 *Medical Diagnosis in Relation to Surgery. D. Riesman, Philadelphia.
2 *Association of Uterine Growths with Goiter: Typical and Atypical Exophthalmic Goiter. H. I. Elsner, Syracuse.
3 *Peculiar Undescribed Disease of Nerves of Cauda Equina. F. Kennedy and C. A. Elsberg, New York.
4 Primary Tissue Lesions in Heart Produced by Spirochete Pallida. A. S. Warthin, Ann Arbor, Mich.
5 Mechanism of Prostatic Retention. E. L. Keyes, Jr., New York.
6 Hypertension: Report of Cases Under Prolonged Observation. M. J. Lichty, Cleveland.
7 Electrocardiograph as Clinical Instrument. J. E. Talley, Philadelphia.
8 *Simple Method for Indirect Transfusion of Blood. W. L. Moss, Baltimore.
9 *Rôle of Carotid Arteries In Causation of Vascular Lesions of Brain. J. R. Hunt, New York.
10 *Value of Quantitative Estimation of Dissolved Albumin in Gastric Extracts (Wolff-Junghans' Test) In Diagnosis of Gastric Cancer. F. Smithies, Chicago.
11 *Jaundice in Tuberculosis. J. M. Cruice, Philadelphia.
12 *Hyaline Degeneration of Islands of Langerhans in Non-Diabetic Conditions. R. L. Cecil, New York.
13 Alcoholism and Epilepsy, Also So-Called Acute Alcoholic Epilepsy. N. S. Yawger, Philadelphia.

1. Medical Diagnosis in Relation to Surgery.—The value of a medical examination, not only in obscure but also in plain, simple surgical cases is emphasized by Riesman. He says that the physician might find diabetes, nephritis, grave anemia, bronchitis, or serious heart disease, any one of which would influence the surgeon in his work. Many delayed deaths after operation might thus be averted. He also feels that in medical cases which may at any time assume a surgical aspect, the surgeon should be consulted long before an operation becomes imperative. In order to increase his diagnostic skill, the physician should make it a rule to be present at all operations on cases that have come before him.

2. Uterine Growths and Exophthalmic Goiter.—Elsner calls attention to the large proportion of uterine growths associated with goiter, typical and atypical exophthalmic goiter, and mentions the frequency of the atypical cases, to encourage the thorough examination of all the organs of the body in the presence of goiter, large or small. He says that if this be done, the number of associated anomalies will prove surprising.

3. Disease of Nerves of Cauda Equina.—The histories of the five patients seen by Kennedy and Elsberg are almost exactly alike in the nature and sequence of incident. In the third and fourth patients the symptoms were progressive in each for about two years, in the second for about one year, and in the first for but six months. Pain was present in all from the beginning; it was sharp, shooting, and burning in character, and was felt almost entirely in the backs of the thighs and in the calves. By the last patient it was described also as needling and cramp-like. In the first four patients the pain was, at the beginning, strictly unilateral, being felt in both legs after the lapse of some weeks or months. The leg first involved remained throughout the illness more affected than its fellow. All but the third patient complained much of tingling and numbness, involving sometimes the feet, sometimes the knees, and in the last two patients the entire surface of the lower extremities. Atrophy of the anterior tibial muscles, with loss of the power of dorsiflexion at the ankle, was a prominent feature in four of the series; in the exception there was a spasticity of the lower extremities, which was more marked on the right than on the left side.

The objective sensory changes showed an astonishing uniformity; in all, the main incidence of the disease had fallen on the lowest roots of the cauda, the sacral roots were always affected, and with the utmost severity. In one patient all the lumbar roots were also involved though to a somewhat lesser degree than were their more lowly placed fellows. In three only had the lowest lumbar roots become diseased to such an extent as to abolish or depress function. The more markedly the lower sacral roots were involved the more complete was the sphincter disturbance. The disorganization of the functions of the bladder and rectum was complete in all but the third case, in which precipitancy and frequency of micturition prevailed. The first third and last cases showed that disease had produced destructive changes in the cord itself; in them the plantar reflex was of the pathologic-extensor type. The abdominal reflexes were present in all the patients. In but one were the ankle-jerks obtained in the affected limbs. The knee-jerks became lost, as in the last case, coincident with the upward progress of the disease.

None of the patients gave either a history or indication of luetic infection. In all, the Wassermann test was carried out in both the blood and cerebrospinal fluid, with completely negative results in every instance. In only one case did the cerebrospinal fluid give any indication of the presence of a disease condition within the dura and in it was of doubtful interpretation, showing a negative Wassermann test and an increased amount of globulin, with twenty lymphocytes per cubic centimeter, a cytologic count, insufficient to accompany any tuberculous process.

The conditions found at operation were the following: In two patients a large number of the caudal roots and in the other three all the roots were swollen, congested, and of a bluish-red color. The changes seemed to be due to an intense hyperemia on the surface of the nerves, and extended into the nerves themselves. Adhesions between the nerve-roots were present in only one case; in the others the only changes were swelling and discoloration. In all five patients the inner surface of the dura was smooth and glistening, and without signs of inflammatory change though in two of them a few small areas of hyperemia were observed. The axis-cylinders showed various degrees of swelling, loss of normal staining reaction, some of them showing granular degeneration, fragmentation and absorption.

8. Indirect Transfusion of Blood.—The method described by Moss consists of two parts: 1. Obtaining blood from the donor, by means of an aspirating apparatus, and its defibrination by shaking in flasks with glass beads. 2. The introduction, intravenously of the defibrinated blood into the patient. The method is described in detail.

9. Rôle of Carotid Arteries.—Hunt urges that in all cases presenting cerebral symptoms of vascular origin, the main

arteries of the neck be carefully examined for a possible diminution or absence of pulsation. In the large majority of cases, a sudden obstruction may occur without softening producing nothing more than mild and transient cerebral symptoms. On the other hand, this may so cripple the cerebral circulation in advanced life that functional deficiencies result and the one hemisphere may be more predisposed to softening processes than the other. Hunt emphasizes the occurrence of diminished pulsation of the carotid on the side of the softening as an occasional symptom in cases of thrombotic hemiplegia, and suggests that the impairment of circulation through the carotid so interferes with the general circulation of the hemisphere as to predispose to thrombus formation and encephalomalacia. He also particularly emphasizes the occurrence of unilateral vascular changes, pallor or atrophy of the disk with contralateral hemiplegia in obstruction of the carotid artery. Unilateral headaches and vertigo, especially in assuming the upright posture, epileptiform attacks, failing memory, attacks of threatened hemiplegia, cerebral intermittent claudication, are some of the vascular symptoms which should suggest the possibility of carotid obstruction.

10. **Wolff-Junghans' Test for Gastric Cancer.**—When carefully performed and interpreted Smithies says the Wolff-Junghans' test for demonstration of dissolved albumin in gastric extracts was positive or suspicious in 80 per cent. of his series of gastric cancer. In this series it was a more constant finding in gastric extracts than were absent free hydrochloric acid, the presence of lactic acid, and the glycytryptophan test. It was rather more constant than tests for occult blood and the demonstration of gastric motor inefficiency. It was not so consistent in its manifestation as the demonstration of organisms of the Boas-Oppler group or the increase in the formol index. In extragastric malignancy, gastric syphilis and nephritis the Wolff-Junghans' test is inconstant. In the differentiation between malignant and non-malignant achylias the Wolff-Junghans' test, when interpreted in connection with other clinical and laboratory data, is of considerable value. Positive reactions are rarely obtained in the achylias of primary anemia, simple achylia gastrica, and simple achlorhydrias when such are unassociated with gastric motor inefficiency. Simple gastric and duodenal ulcers, especially when accompanied by pyloric stenosis or gastric atony, may give confusing resources to the Wolff-Junghans' test. The presence of blood in gastric extracts may be a factor in the production of certain atypical positive tests.

11. **Jaundice in Tuberculosis.**—Cruice has seen 7 cases of jaundice among 1,748 cases of chronic pulmonary tuberculosis. He believes that jaundice occurring in the course of chronic tuberculosis is probably due to some form of tuberculosis of the liver, either extrahepatic or intrahepatic. The grade of the jaundice is helpful in surmising the pathologic condition, intense jaundice being probably due either to pressure of tuberculous glands on the extrahepatic ducts or to some form of the solitary tubercles of the liver; milder forms being produced by a miliary tuberculosis of the liver.

12. **Degeneration of Islands of Langerhans.**—Six cases of hyaline degeneration of the islands of Langerhans in which there was no evidence of diabetes occurred in subjects aged over 37 years. In addition to the hyaline changes there were found in every case more or less sclerosis of the insular capillaries, and a chronic interacinar pancreatitis of the type usually encountered in diabetes mellitus. The explanation of this phenomenon, which has seemed most likely to Cecil is that hyaline degeneration of the islands, may occur up to a certain point without producing diabetes. When a number of islands sufficient to interfere with carbohydrate metabolism have been involved, diabetes ensues. The hyaline changes in the island of Langerhans, Cecil says, have been associated in every case with hyaline degeneration of the renal glomeruli. The lesions in both instances are possibly referable to sclerosis of the smaller vessels supplying these structures.

American Journal of Public Health, Boston

May, IV, No. 5, pp. 391-476

14 Sociologic Aspects of Health Department Reorganization in New York State. J. A. Kingsbury, New York.
15 Sociologic Aspects of Reorganization of Cleveland Health Department. R. H. Biship, Jr., Cleveland.
16 Reorganizing Minneapolis Health Department. F. Bass, Minneapolis.
17 Bacteriologic Methods for Meat Analysis. J. Weinzirl and E. B. Newton, Washington, D. C.
18 Bacteriologic Analysis of Hamburger Steak with Reference to Sanitary Standards. J. Weinzirl and E. B. Newton, Washington, D. C.*
19 Milk-Borne Epidemic of Diphtheria. H. H. Waite, Lincoln, Neb.
20 Calcium Hypochlorite as Disinfectant of Water. E. J. Tully, Madison.
21 Methods of Fighting House Fly. E. C. Levy, Richmond, Va.
22 New Shipping Outfit for Iced-Water Samples. F. H. Billings and C. C. Young, Lawrence, Kan.

American Journal of Tropical Diseases and Preventive Medicine, New Orleans

May, I, No. 11, pp. 751-814

23 Influence of Experimental Trypanosomiasis on Body Temperature of White Rats. L. W. Graham and R. H. Hutchison, Philadelphia.
24 *Relationship of Anaphylaxis to Immunity. F. B. Gurd, Montreal.
25 Occurrence of Trichonocardiases in New Orleans. F. M. Johns, New Orleans.
26 Epidemic Climatic Bubo. N. Barlow, Cuyamel, Honduras.
27 Impetigo Tropica. N. Barlow, Cuyamel, Honduras.

24. **Relationship of Anaphylaxis to Immunity.**—For the last two years Gurd, in association with Dr. J. C. Meakins, has carried out experiments in the hope of proving by direct methods the presence in the serum of so-called immune animals, of a substance capable of protecting the sensitized animal against the manifestations of anaphylaxis. He found that the blood-serum of immune animals contains not only sensitizing bodies, but also some substance which is potent to protect the animal from the effects of the cleavage toxic split products. For purposes of explanation Gurd calls the anaphylactic ferment the lysin of the first order. This is the cause of the anaphylactic state. The ferment capable of digesting the toxic split product he has designated the lysin of the second order. It is to the presence in the tissues of lysins of the second order that the repeatedly inoculated animal owes its so-called immunity to the toxin.

With reference to the second order of lysin, Gurd found that with whole proteins used as injection material the lysins of the first order are always produced first. The lysins of the first order are elaborated to a much more marked extent than are those of the second order; all immune animals are therefore potentially sensitized. This is shown by allergic reactions and passive anaphylaxis as well as by direct experiments, such as those reported in this paper. The persistence of the lysins of the second order in the tissues is much shorter than that of the first order. "Immune" animals, therefore, become ultimately markedly sensitive.

Boston Medical and Surgical Journal

May 28, CLXX, No. 22, pp. 821-860

28 Diagnosis and Treatment of Disease of Stomach. F. W. White, Boston.
29 Significance of Minimal Macroscopic Gastric Stasis. A. E. Austin, Boston.
30 Banti's Disease with Report of Successful Splenectomy. M. G. Sturgis, Seattle, Wash.
31 Operation for Correcting Aquiline Nasal Deformity. O. A. Lothrop, Boston.
32 *Anaphylactic Reactions Occurring in Horse Asthma after Administration of Diphtheria Antitoxin. J. L. Goodale, Boston.

32. **Anaphylactic Reactions Occurring in Horse Asthma.**—In three cases of horse asthma, reported by Goodale, the application of horse-serum to the nasal mucous membrane, or to a cut of the skin gave rise to an immediate reproduction in miniature of the phenomena of anaphylactic shock, namely spasm of the arterioles, with edema and surrounding congestion.

One case of horse fever gave a delayed but otherwise typical skin reaction, but no disturbance in the nose. One case of horse fever gave a delayed reaction to the nasal test, but was negative for the skin test. Four of the horse-

fever cases without asthma were negative for both tests. Five cases of bronchial asthma and five cases of hay-fever, without sensitiveness to horses, gave negative results.

Goodale is convinced that in horse asthma, an anaphylactic reaction may occur after the administration of horse-serum; in horse fever with nasal symptoms alone, this danger is less or not at all to be feared, and in other types of asthma and of vasomotor rhinitis it is not present.

Colorado Medicine, Denver

May, XI, No. 5, pp. 179-212

33 Suspension Laryngoscopy. L. B. Lockard, Denver.
34 Bacteriology of Acute Rheumatism. R. C. Baker, Denver.
35 Eye Lesions Resulting from Auto-Intoxication. H. M. Thompson, Pueblo.

Journal of Biological Chemistry, Baltimore

May, XVII, No. 4, pp. 413-543

36 Behavior of Emulsin in Presence of Collodion. R. E. Clausen, Berkeley, Cal.
37 Action of Leukocytes and Kidney Tissue on Pyruvic Acid. P. A. Levene and G. M. Meyer, New York.
38 Fate of Alanine in Glycosuric Organism. H. D. Dakin and H. W. Dudley, New York.
39 *Formation of Glycocoll in the Body. III. A. A. Epstein and S. Bookman, New York.
40 Preparation of Creatin, Creatinin and Standard Creatinin Solutions. O. Folin, Boston.
41 Determination of Creatinin and Creatin in Urine. O. Folin, Boston.
42 Determination of Creatinin and Creatin in Blood, Milk and Tissues. O. Folin, Boston.
43 Creatin Content of Muscle. O. Folin and T. E. Buckman, Boston.
44 Creatinin and Creatin Content of Blood. O. Folin and W. Denis, Boston.
45 Protein Metabolism from Standpoint of Blood and Tissue Analysis. VII. Interpretation of Creatin and Creatinin in Relation to Animal Metabolism. O. Folin and W. Denis, Boston.
46 *Synthesis of Hippuric Acid in Animal Organism. I. In Rabbits on Glycocoll Free Diet. H. B. Lewis, Philadelphia.
47 Constitution of Kynurenic Acid. A. Homer, Toronto.
48 *"Emotional Glycosuria" in Man. O. Folin, W. Denis and W. G. Smillie, Boston.
49 *Theory of Diabetes. III. Glycollic Aldehyd in Phlorizinized Dogs. W. D. Sansum and R. T. Woodyatt, Chicago.
50 Velocity of Hippuric Acid Formation and Elimination from Animal Body. A. M. Raiziss, G. W. Raiziss and A. I. Ringer, Philadelphia.
51 Reduction of Ammonium Molybdate in Acid Solution. C. W. Miller and A. E. Taylor, Philadelphia.

39. **Formation of Glycocoll.**—The data obtained in experiments by Epstein and Bookman show that alanin, free or combined with a benzoyl radical, fails to yield glycocoll. This result is in accord with work of Magnus-Levy. From the structural character of alanin it is not conceivable that it can be directly converted into glycocoll. The authors' results serve to show, however, that in its decomposition in the body, alanin does not yield cleavage products which can be synthesized into glycocoll. Furthermore, alanin has no direct or indirect effect on hippuric acid metabolism. The increased output of hippuric acid, and hence glycocoll, observed after the administration of benzoyl-leucin the authors suggest is probably not a function of the benzoyl radical of the compound.

46. **Synthesis of Hippuric Acid in Organism.**—In rabbits fed on a glycocoll free diet of milk, Lewis found that the ingestion of sodium benzoate causes no marked rise in the elimination of total nitrogen. The nitrogen eliminated as hippuric acid appears to be derived at the expense of the nitrogen normally present in the urine as urea, since the urea elimination decreases with increased hippuric-acid elimination. The synthesis of glycocoll for the purposes of detoxication of the benzoate results from a deviation of the normal path of catabolism and not from a specialized metabolism. These results are in agreement with those obtained by McCollum and Hoagland in their studies on pigs reduced to their endogenous protein metabolism.

48. **Emotional Glycosuria.**—In order to obtain additional data on the subject of glycosuria in the insane, the authors examined the urine of 192 patients at the McLean Hospital for the Insane. In 22 of these they found unmistakably positive sugar reactions with Nylander's, Benedict's and the phenylhydrazin tests. The great majority, but not all of those who had sugar in the urine, suffered from depression, apprehension or excitement. Some of them had been in apparently the same condition with reference to the emotional state for several years. Of 664 consecutive urine examinations made at the Danvers State Hospital for the Insane, the number giving a positive test for sugar was 58. Of 34 second-year medical students examined before and after an examination one had sugar both before and after the examination. Of the remaining 33, 6, or 18 per cent., had small but unmistakable traces of sugar in the urine passed immediately after the examination.

A similar study was made on second-year women students. Since these students were younger and presumably much more excitable than the medical students it was thought that even more striking results might be obtained. This expectation did not prove well founded. Out of 36 taking the examination and who had no sugar in the urine on the day before, 6 of the 17 per cent. eliminated sugar with the urine passed immediately after the examination. It seems reasonably certain from the results obtained that pronounced mental and emotional strain may produce temporary glycosuria in man.

49. **Glycollic Aldehyd in Phlorizinized Dogs.**—Glycollic aldehyd has been prepared from the crystallin dihydroxyfumaric anhydrid of Fenton and Jackson. Given to fully phlorizinized dogs in single doses of about 5 per cent. strength subcutaneously it has apparently caused an increased breakdown of protein as evidenced by a rise in the urinary nitrogen and a corresponding increase of the sugar while G : N remained constant. The initial rise has been followed in later periods by a fall in all the urinary components examined. When given very slowly in dilute 1 per cent. solution there has been observed an absolute rise in the glucose excretion out of proportion to the rise in the nitrogen, hence an increased G : N ratio not due merely to a lessened nitrogen output but suggestive of a new formation of glucose out of glycollic aldehyd itself. Some 45 to 75 per cent. of the glycollic aldehyd given appears to have escaped oxidation and become converted into glucose in these latter experiments. Judgment is reserved as to whether the small increases of reducing substances seen in these experiments are due to a conversion of glycollic aldehyd into d-glucose or to some other process.

Journal of Cutaneous Diseases, New York

June, XXXII, No. 6, pp. 413-480

52 Why We Deferred General Treatment of Syphilis Until Appearance of Secondary Symptoms. H. G. Klotz, New York.
53 Kromayer Light in Treatment of Certain Diseases of Skin. A. S. Clark, New York.
54 Mycosis Fungoides Occurring in Negress. B. Wolff, Atlanta, Ga.
55 Dermatitis Herpetiformis with Transitory Pemphigoid Eruption. H. K. Gaskill, Philadelphia.

Journal of Experimental Medicine, Lancaster, Pa.

May, XIX, No. 5, pp. 417-522

56 *Significance of Submiliary Myocardial Nodules of Aschoff in Rheumatic Fever. W. Thalhimer and M. A. Rothschild, New York.
57 *Experimental Focalized Myocardial Lesions Produced with Streptococcus Mitis. W. Thalhimer and M. A. Rothschild, New York.
58 *Experimental Arthritis in Rabbit, Produced with Streptococcus Mitis. M. A. Rothschild and W. Thalhimer, New York.
59 *Stage in Migration of Adult Tertian Malarial Parasite. M. Rowley-Lawson, New London.
60 *Nature of Serum Antitrypsin. J. W. Jobling and W. Petersen, New York.
61 *Serotoxin. J. W. Jobling and W. Petersen, New York.
62 Growth of Bacteria on Media Containing Various Anilin Dyes, with Special Reference to an Enrichment Method for Typhoid and Paratyphoid Bacilli. C. Krumwiede, Jr., and J. S. Pratt, New York.
63 *Factors of Resistance to Heteroplastic Tissue Grafting. J. B. Murphy, New York.

56. **Nodules of Aschoff in Rheumatic Fever.**—In rheumatic myocarditis, foci, termed submiliary nodules of Aschoff, are present which are characteristic of the rheumatic infection. They are most frequently found in the walls of the left ventricle, the auricles usually escaping. The nodules were

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found by Thalhimer and Rothschild in three cases of chorea without joint manifestations, proving the close relation of this condition to rheumatism. They were absent in fourteen cases of subacute bacterial endocarditis due to *Streptococcus mitis*. They were not found in infections of the endocardium with the gonococcus, staphylococcus, streptococcus or pneumococcus. Even in the absence of a rheumatic history the authors agree with Fraenkel, that the presence of Aschoff bodies signifies a previous rheumatic infection. Aschoff bodies are not always found in rheumatic carditis, where the infection antedates death by a long period, but the healed remains, represented by sclerotic patches (*"Schwielsen"*), are present. Thalhimer and Rothschild suggest that the cases of arthritis characterized by the presence of the submiliary nodules of Aschoff in the myocardium be placed in one group and called for the time being "rheumatism"; and the cases with articular manifestations, yielding positive bacteriologic findings and no Aschoff bodies, should be classified according to the infecting microorganisms concerned, and not as rheumatism.

57. **Experimental Focalized Myocardial Lesions.**—By the intravenous injection into 42 rabbits of *Streptococcus mitis*. Thalhimer and Rothschild produced focalized myocardial lesions which are identical with those caused by the injection of *Streptococcus rheumaticus*, and with those produced by Bracht and Wächter with *Streptococcus viridans*. The lesions differ from those produced by injections of streptococci from the Chicago epidemic of sore throat (epidemic streptococcus). They are not identical with Aschoff bodies and are easily differentiated from them. They also differ from the foci produced by Jackson and Coombs, who describe their lesions as being either Aschoff bodies or similar formations. The myocardial lesions of the rabbit appear to be caused by toxins liberated by the streptococci injected and not by the living organisms themselves. The only point of similarity between the experimental lesions and those found in cases of rheumatic carditis in man is their focalized nature.

58. **Experimental Arthritis in Rabbit.**—Rothschild and Thalhimer produced arthritis in 50 per cent. of the rabbits injected with *Streptococcus mitis*. The character of the arthritis is identical with that produced by *Micrococcus rheumaticus*. The exudate in and about the joints partakes of the same nature as that caused by *Streptococcus rheumaticus*. Bacteriologic studies show that *Streptococcus mitis* can be recovered from about one-third of the affected joints. Arthritis produced by other types of streptococci differs by reason of greater destruction of tissue, by being more permanent in character, and by the exudate containing large numbers of polymorphonuclear leukocytes. The deduction of a distinct variety or species of streptococcus based on the power to cause arthritis in rabbits, the authors claim, is unwarranted.

59. **Migration of Adult Tertian Malarial Parasite.**—What appear to be certain definite stages in the migration of the malarial parasite from red corpuscle to red corpuscle were demonstrated by Rowley-Lawson thus giving a reasonable explanation of the loss of red corpuscles which cannot be accounted for by the destruction of the infected corpuscles at the time the parasites segment. Migration to other red corpuscles is a satisfactory explanation of the ultimate fate of the young parasites seen in instances of multiple infection of single corpuscles.

60. **Nature of Serum Antitrypsin.**—The ferment inhibiting action of the serum believed by Jobling and Petersen to be due to the presence of compounds of the unsaturated fatty acids. These fatty acid compounds may be removed from the serum by means of chloroform or ether. Soaps prepared by saponifying the chloroform or ether extracts inhibit the action of trypsin. The anti-enzyme action of the serum can be removed by filtering acid serum through kaolin, and can in part be restored by extracting the kaolin. The decrease in strength of anti-enzyme in old sera is probably due to the action of the serum lipase. Iodin, potassium iodid or hydrogen peroxid remove the inhibiting action of the serum. Soaps of the unsaturated fatty acids lose their ferment inhibiting action when heated with serum at 70 C.

61. **Serotoxin.**—Jobling and Petersen found that sera from which the protective lipoids (unsaturated fatty acids) have been removed are toxic for the homologous animal. The toxicity is due to three factors: (a) an alteration in the mechanism of coagulation, with resulting intravascular coagulation; (b) the exposure of the native serum proteins; (c) the formation of toxic split products (primary proteoses) by autolysis. A definite maximum of toxicity can be determined, with a final stage of atoxicity due to continued autolysis. Hirudin and sodium citrate do not protect animals. Heating to 70 C. destroys, or greatly lessens the toxicity of the serotoxin, although the isolated proteoses are toxic after boiling. The return of the extracted lipoids (saponified) neutralizes the toxicity. Unsaturated soaps also neutralize the toxicity. Sublethal doses produce extreme prostration, marked fall in body temperature, no eosinophilia, and an increase of antitrypsin. Sublethal doses of rapidly prepared chloroform sera cause a decrease in coagulation time; sublethal doses of autolyzed sera cause an increase in coagulation time. Previously injected animals are more resistant (increased antiferments). Iodized animals are less resistant (decreased antiferments).

63. **Factors of Resistance to Heteroplastic Tissue Grafting.**—It has been shown that the chick embryo offers suitable conditions for the growth of implanted tissues whether these be embryonic or adult of the same species or of a foreign one. The chick at about the time of hatching develops a defensive mechanism against the tissue of foreign species. This resistance, Murphy says, can be supplied to the embryo in the early stages if grafts of adult spleen or bone-marrow are implanted. Under these conditions the embryo exhibits the same resistance to foreign tissue as does the adult, and presents the same histologic manifestations about the graft. Furthermore, the same tissues, spleen and bone-marrow, when grafted into an embryo with an established and growing rat tumor, bring about a retrogression and absorption of the foreign tissue. Other adult tissues do not supply this power to embryo.

Kansas Medical Society Journal, Topeka

May, XIV, No. 5, pp. 171-210

64 Eye, Ear, Nose and Throat in Exophthalmic Goiter. J. H. Johnson, Coffeyville.
65 Case of Diabetes. C. R. Townsend, Centralia.
66 Should Pamphlet for Gratuitous Distribution on Venereal Peril be Issued by this Society? E. T. Shelly, Atchison.

Lancet-Clinic, Cincinnati

May 16, CXI, No. 20, pp. 567-592

67 Problem of Using Oxytocic Drugs During Labor. W. Gillespie, Cincinnati.
68 Uncinariasis Disease. M. J. White, St. Louis.
69 Medical Inspection of Schools. A. L. Brankamp, Richmond, Ind.

May 23, No. 21, pp. 593-618

70 Removal of Both Superior Maxillae. C. Hiller, Cincinnati.
71 Hypertension as Clinical Entity. L. A. Lurie, Cincinnati.
72 Cerebellar Tumor and Use of New Stitch to Control Hemorrhage of Scalp. W. Griess, Cincinnati.
73 Carnegie Foundation and Education. S. P. Kramer, Cincinnati.

Laryngoscope, St. Louis

April, XXIV, No. 4, pp. 241-484

74 Index-Medicus of Oto-Laryngology for 1913.

Modern Hospital, St. Louis

May, II, No. 5, pp. 267-330

75 Elizabeth Steel Magee Hospital of Pittsburgh. C. E. Ziegler and T. E. Billquist, Pittsburgh.
76 Treatment of Delirium in General and in Special Hospitals. D. Gregg, Boston.
77 Dietary Department of Johns Hopkins Hospital. A. P. Atwood, Baltimore.
78 Greenpoint Hospital—Part of Brooklyn Hospital System. F. J. Helmle, Brooklyn.
79 Purchase, Preparation, and Service of Food Supplies. E. A. Greener, Muskegon, Mich.
80 Fire Protection and Fire Drills for Hospitals. C. W. Hejda, Chicago.
81 Moving Pictures in Minnesota State Institutions. M. E. Carey.

New Jersey State Medical Society Journal, Orange

May, XI, No. 5, pp. 217-270

82 Ether Anesthesia by Open Method. F. R. Widdowson, Philadelphia.
83 Some Phases of Appendicitis. G. Williams, Atlantic City.
84 Physiologic and Psychologic Functions of Artificial Light. F. L. Godinez, Jersey City.
85 Utility of Hodgen Splint in Fracture of Thigh. J. A. MacLay, Paterson.

New Mexico Medical Journal, Las Cruces

May, XII, No. 2, pp. 35-62

86 Contagion Among Canon Cito Navajo Indians. C. L. Day, Albuquerque.
87 Treatment of Pyosalpinx. W. R. Lovelace, Albuquerque.
88 Surgery under Difficulties. J. G. Holmes, Alamogordo.
89 Bacillus Bulgaricus in Diphtheria. G. Werley, El Paso, Tex.

New York Medical Journal

May 23, XCIX, No. 21, pp. 1013-1060

91 Treatment of Insane in Tropics. (To be continued.) F. Woodbury, Philadelphia.
92 *Inlay Bone Graft in Fresh Fractures. F. H. Albee, New York.
93 Relief of States of High Vascular, Muscular and Mental Tension. W. J. M. A. Maloney and V. E. Sorapure, New York.
94 Surgery of the Hour-Glass Bladder. J. B. Squier, New York.
95 Vagitus Uterinus. Case-Report. G. L. Brodhead, New York.
96 Preventive and Curative Treatment of Ophthalmia Neonatorum. A. Brav, Philadelphia.
97 Albumin Reaction in Sputum. W. M. Lewis, Baltimore.
98 Hyperthyroidism. E. Birdsall, Glens Falls.
99 Surgical Relationships of Mouth Infections. T. B. Hartzell, Minneapolis.
100 Intestinal Parasites (Strongyloides Intestinalis), with Unusual Symptoms. M. I. Moss, Philadelphia.
101 Autoserotherapy in Fibrinoserous Pleurisy. H. M. Fisher, Philadelphia.
102 New Psychosis. S. Block, New York.

92. **Inlay Bone Graft in Fresh Fractures.**—The graft used by Albee is removed from the fractured bone, instead of from the crest of the tibia, by making the segment removed from one fragment double the length of that removed from the other, if possible 5½ inches for the long fragment and 2½ inches for the length of the short fragment.

After stripping up the periosteum overlying the area from which the short segment is to be removed—and this stripping should be done with a sharp instrument to insure the removal of the underlying osteogenetic cells—the gutter is started by the twin saws adjusted at a suitable distance apart, depending on the size of the graft and gutter to be formed. The long segment to be removed from the other fragment is outlined with the twin saws, adjusted at the same distance as when outlining the short segment, but the periosteum is removed from only the distal half of the long segment. These parallel saw cuts are now continued through the bone to the medullary cavity, with the single saw held at such an angle as to cause the cuts to converge in approaching the medullary cavity, in order to prevent the graft, when forced tightly into position, from dropping into the medullary cavity beneath. To free the ends of the grafts transverse cuts are made, either with a smaller motor saw or with a chisel.

The breadth of the saw-blade cuts is sufficient to allow the graft, when turned about and placed in position, to sink slightly below the borders of the gutter, thus furnishing a margin along the sides of the long graft into which dowel holes are drilled obliquely outward to receive the autogenous dowel pegs made by splitting the removed short segment into fragments and running them through the doweling instrument.

When these pegs are driven into place, the graft is held securely, and proper alignment of the fragments is insured by the leverage action of the accurately fitting graft to its gutter bed. The periosteum is then drawn over the denuded portion of the graft and held by a few catgut sutures; also the periosteum left at the site of the short fragment is drawn across the gap and sutured with catgut.

Surgery, Gynecology and Obstetrics, Chicago

May, XVIII, No. 5, pp. 529-660

103 *Difference between Older and Newer Treatment by Roentgen Kay and Radium in Gynecologic Diseases. B. Kronig, Freiburg.
104 Treatment of Blood-Vessel Injuries. W. W. Grant, Denver.
105 *Surgical Repair of Blood-Vessels: Its Technic, Its Uses and Limitations. J. S. Horsley, Richmond, Va.
106 Cancer of Breast in Boy Fifteen Years Old. R. C. Bryan, Richmond, Va.
107 *Eventration of Diaphragm. I. F. Stein, Chicago.
108 Complications Following Surgical Operations. E. H. Beckman, Rochester, Minn.
109 Hysteromyomectomy, Its Evolution and Perfection. L. S. McMurtry, Louisville, Ky.
110 Efficiency Engineering in Pelvic Surgery: One- and Two-Suture Operations. R. L. Dickinson, Brooklyn.
111 *Experimental Work in Bone Transplantation. E. J. Lewis, Chicago.
112 Transplantation of Bone in Pott's Disease. E. W. Ryerson, Chicago.
113 Bone Transplant. H. B. Thomas, Chicago.
114 Supernumerary Ureter Opening Extravesically. H. D. Furniss, New York.
115 Influence of Ectopic Pregnancy on Uterus, with Special Reference to Changes in Its Blood-Supply and Uterine Bleeding. J. A. Sampson, Albany, N. Y.
116 *Education and Publicity Through Council on Health and Public Instruction of American Medical Association. F. R. Green, Chicago.
117 *Congenital Pyloric Stenosis. R. Hill, St. Louis.
118 Operative Treatment for Malformations of Uterus and Vagina. J. M. M. Kerr, Glasgow, Scotland.
119 *Method of Exposing Pelvic Portion of Ureter. J. M. Birnie, Springfield, Mass.
120 Technic Employed in Excision of Carcinomatous Urethra. S. Stark, Cincinnati.
121 *Simple Heat Method of Sterilizing and Storing Catgut. W. Bartlett, St. Louis.
122 *New Operative Procedure for Treatment of Suppurative Salpingitis in Young Women. W. B. Bell, Liverpool.
123 Treatment of Fractures by Fixation with Animal Bone Plates and Bone Screws. E. J. Brougham and A. C. Ecke, Chicago.
124 Treatment of Case of Birth Fracture of Shaft of Femur. V. P. Blair, St. Louis.
125 Personal Experiences with Coagulene-Kocher-Fonio. G. de Tarnowsky, Chicago.
126 Some Recent Tests for Gastric Carcinoma. R. M. Carter, Green Bay, Wis.

103. Abstracted in THE JOURNAL, Dec. 6, 1913, p. 2098.

105. Abstracted in THE JOURNAL, Jan. 17, p. 233.

107. **Eventration of Diaphragm.**—In Stein's case examination revealed a typical eventration of the diaphragm with the stomach, the greater part of the small and large intestine, the spleen, the left lobe of the liver, the tail of the pancreas, and the upper pole of the left kidney in the chest. The heart was found greatly enlarged and pushed extremely to the right. The lungs were found above and to the right of the diaphragm, all compressed except the lower lobe of the right lung. The diaphragm on the left side was found to be a fibrous dome, thin and gray in appearance, extending to the level of the second interspace, in which no muscle fibers were seen. The remaining abnormality was that of undescended testes, which were found in the abdomen.

111. **Experimental Work in Bone Transplantation.**—The following conclusions based on experiments are submitted by Lewis: 1. That cortical bone, free of its periosteum, endosteum, and marrow will retain its vitality and proliferative powers when subdivided into small fragments and replaced in the tissues. Also that contact with living bone is unnecessary for the growth of these transplants. 2. That larger pieces of bone may be transplanted and remain alive—not being merely grown into by the bone in which they come in contact. 3. That bones may unite after fracture or a space fill in after resection without the aid of any periosteal or bony bridge, and that transplanted fascia may be made to take up the nutritional and limiting functions of the periosteum.

Lewis reports an observation of a case in which a portion of bony shaft 3 centimeters in length was removed and the adjacent periosteum of the ends of the shaft thoroughly scraped away. The interval between the ends was then surrounded by a transplant of fascia which was made to extend up and down along the shaft for some distance. At the post mortem nine weeks later complete bony filling in of the space with excessive callus formation had occurred. The fascia transplant had fused above and below with the periosteum and could not be differentiated from it. In another experiment the same method was followed except that no fascia transplant was used, the space between the periosteum and could not be differentiated from it. In this case no periosteal or bony bridge was allowed to remain, in spite of which fact, at post mortem nine weeks later, a good bony filling in of the space was found to have occurred.

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116. Abstracted in THE JOURNAL, Dec. 6, 1913, p. 2099.

117. Abstracted in THE JOURNAL, Jan. 31, p. 405.

119. **Exposing Pelvic Portion of Ureter.**—With the patient in the Trendelenburg position Birnie makes a median incision beginning close to the pubic bone and extending upward, exposing the space of Retzius in the usual manner. No muscle fibers are cut but the recti are retracted to either side. The point where the parietal peritoneum is reflected onto the bladder is noted and care taken not to open the peritoneal cavity. Starting at the bladder, the peritoneum is wiped away toward the median line separating it from the bladder and pelvic wall, thus exposing the ureter. With retraction one gets a complete exposure of the ureter and any necessary procedures may be carried out under the guidance of the eye. Drainage, if necessary may be instituted through the original incision or through a separate stab wound.

121. **Method of Sterilizing and Storing Catgut.**—The process is divided by Bartlett into three definite steps: drying, sterilization and storage. The ordinary commercial 10-foot catgut strand is divided into four equal lengths, each of which is made into a coil about the diameter of a silver quarter. By twisting the last free end three or four times around the components of this little coil the latter is enabled to maintain its shape. These coils are then strung like beads on a thread so that any desired number can be conveniently handled by simply grasping the thread. The string of catgut coils is dried in a bacteriologist's dry sterilizer for four successive hours at a temperature of 80 F., 90 F., 100 F. and 110 F. centigrade. Let thin gauze be interposed between catgut and metal. This should not be attempted on a damp day or in a room which steam enters. The catgut is immediately placed in liquid albolene (petrolatum liquidum) where it is allowed to remain until "clear" in the sense that the term is used in the preparation of histologic specimens. This is usually accomplished in a few hours, though it has been Bartlett's custom to allow the gut to remain in the oil over night. Thin paper must line the receptacle so that the catgut may not touch its walls.

The vessel containing the oil is placed on a pan of sand and the temperature raised by a gas-flame during one hour to 160 F. centigrade, which temperature is maintained for a second hour. By seizing the thread with a sterile forceps the gut is lifted out of the oil, an excess of which is allowed to drip off, the thread is cut and the coils dropped into a solution of iodin crystals in Columbian spirits (deodorized methyl alcohol), the proportion of iodin varying according to the diameter of the catgut. For No. 00 it should be 1 to 700; for No. 0, 1 to 600; for No. 1, 1 to 500; for No. 2, 1 to 400; for No. 3, 1 to 300; for No. 4, 1 to 200; the iodin being taken by weight and the alcohol by volume. The material becomes ready for use in a few hours, and should remain in the solution indefinitely without deterioration. A few coils may be removed at any time with no risk of contaminating those left behind.

122. **Operative Procedure for Suppurative Salpingitis.**—Bell's method aims at removing diseased structures as widely as possible, while one ovary, or a portion of it, is preserved, together with sufficient endometrium to ensure the subsequent occurrence of regular menstruation. In other words, both tubes, one ovary and a wedge-shaped portion of the fundus uteri are removed.

West Virginia Medical Journal, Wheeling

May, VIII, No. 11, pp. 361-394

127 Syphilis. M. Mendeloff, Charleston.
128 Salvarsan. W. S. Robertson, Charleston.
129 Life-Insurance Examinations. J. T. Thornton, Wheeling.
130 Morphin and Alcohol Affect Brain Cells. J. W. Williams, Richmond.
131 Common Errors in Neurologic Diagnosis and Treatment. T. A. Williams, Washington, D. C.
132 County Medical Society. G. W. Swimley, Bunker Hill.
133 Bowel Movements after Abdominal Section. I. Hardy, Morgantown.
134 Medical Temperance. E. M. Chalfant, Shinnston.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

May, XI, No. 125, pp. 193-240

1 Group of Cases of Chronic Recurrent Diarrhea in Childhood. F. J. Poynton, R. R. Armstrong and D. N. Nabarro.
2 Food Value Required by Growing Girls, Aged Four to Fifteen. Result of Investigations Carried on for Seventeen Years, with Analysis and Comments. (To be continued.) J. G. Sharp.
3 Congenital Familial Cholemia without Splenomegaly. G. R. Ward.

British Medical Journal, London

May 16, I, No. 2785, pp. 1053-1104

4 *Phenomena Attributable to Spasm of Cerebral Vessels (Angiospasm). W. Russell.
5 Oxygen Want and Means of Its Relief. A. G. Auld.
6 *Relation Between Epilepsy and Tuberculosis. B. H. Shaw.
7 *Strychnin-Tuberculin Treatment of Hospital Tuberculous Cases. J. H. Whelan.
8 *Cutaneous Tuberculin Reaction of Von Pirquet. A. J. B. Leckie.

4. **Phenomena Attributable to Cerebral Angiospasm.**—The special condition discussed by Russell is spasm constriction of the arterial channels in localized areas of the brain; the term "cerebral angiospasm" is given to the condition. Although the cerebral vessels cannot be seen, the vessels of the retina can be examined by means of the ophthalmoscope, and it has been clearly established that angiospasm occurs in these vessels. Various observers have noted that a temporary loss of vision of one-half of the retina may be associated with marked diminution in the size of the retinal vessels corresponding to the blind field, and that vision returns with the relaxation of the constricted vessels and the reestablishment of the normal blood-supply to the part. From these observations alone Russell believes it is fair to postulate that corresponding constriction can take place in the arteries in localized areas of the brain.

6. **Relation between Epilepsy and Tuberculosis.**—An analysis of 100 deaths among epileptics by Shaw taken seriatim shows that tuberculosis was the cause in 33 cases. A similar analysis of 290 deaths among non-epileptic patients gives the figure 24.1. The tuberculosis mortality is therefore nearly 10 per cent. greater among epileptics. He tried the tuberculin test on 60 epileptics; the resultant reactions were negative in 3 cases, doubtful in 7, and positive in 50. The corresponding figure for 10 non-epileptic patients resident in the epileptic ward was 50.0. A very noticeable peculiarity among epileptics is the marked depression of temperature after even a comparatively small initial rise and the quick response to the tuberculin in the first place. In 7 cases the temperature dropped to 96 F. and below (one reaching 95.4 F.), in 4 cases to 96.2 F., and in 6 to 96.4 F. In 15 cases it dropped to between 96.8 F. and 97.2 F. so that in 31 cases, or over 50 per cent., this sudden depression was marked. In all these cases the epileptic seizures were very severe and frequent, and in the 7 cases in which the temperature fell to 96 F. and below exceptionally so.

The frequency of subnormal temperatures among epileptics was also very marked. Out of the 60 cases under consideration this condition was present in 35; physical signs were present in 22, doubtfully so in 6, and apparently absent in 7 cases. Of all those showing a positive reaction to tuberculin, physical signs were present in 61.6 per cent., and the number of cases in which the right apex was involved as compared with the left is remarkable; out of the total number showing signs of tuberculous deposit (namely, 38), in 33 the right apex was involved. This is a fact of very great interest when it is recollected that it is mainly on the right side that the tracheo-bronchial glands are implicated in children. It is contended by Shaw that epilepsy may be an evidence of tuberculous infection in childhood, probably affecting the bronchial glands, initially, and that the convulsions are due either to reflex irritation so set up or to the resulting toxemia acting on an unstable nervous system, either inherited or acquired. Further, that the constantly recurring seizures not only establish a vicious habit as far as the nervous system is concerned, but also effect tuberculin autoinoculation, thus tending to keep the tuberculous process in check, so that,

instead of a fatal termination epilepsy results. Consequently, the advisability of carefully searching for tuberculous foci in children the moment epileptic fits develop, and also the immediate use of tuberculin in their treatment, should receive consideration.

7. **Strychnin-Tuberculin Treatment of Tuberculosis.**—Whelan gives strychnin injections to all kinds of tuberculous patients, including cases in which tuberculin injections are contraindicated, with the best results. He gives strychnin in acute and chronic cases, in the pyrexial and the apyrexial, in the early stages and in the most advanced, and with invariably good results. It always improves the appetite and general condition. Patients who have a loathing for food soon regain their appetites under its influence. Strychnin, Whelan states, will frequently do away with the painful necessity of adopting gastric lavage and over-alimentation. But the drug must be given by intramuscular or subcutaneous injection, preferably the former. Administered by the mouth it has not the same effects and in large doses will cause tormina and diarrhea, with possibly disastrous results in advanced cases. These effects are never produced by the injections. Hemorrhages from the lungs, Whelan says, are found to be no contra-indication for the strychnin injections. He has given them in such cases with remarkably good effects when the circulation had been quieted by morphin. The following is the solution he invariably uses: ℞ Liquor strychnin hydrochlorid (B.P.) 100 minims; sterile normal saline solution made with camphor water, add to make 400 minims; Signa: 1 in 400 strychnin solution. Dose, 18 to 25 minims.

8. **Von Pirquet Cutaneous Tuberculin Reaction.**—Leckie holds that the cutaneous reaction is of no prognostic or diagnostic value; that results are more frequently obtained in women and children than in men; that the older the individual the less likely is the reaction to be obtained; old-standing lesions, as distinguished from advanced cases, usually fail; cases of rheumatism give more positive results than tuberculous individuals; late and early reactions have no clinical significance.

Journal of Laryngology, Rhinology, and Otology, London

May, XXIX, No. 5, pp. 225-280

9 Intranasal Operations for Frontal Sinus Suppuration. P. Watson-Williams.
10 Intranasal Treatment of Empyema of Frontal Sinus. H. Tilley.
11 International Collective Investigation of Ozena. A. B. Kelly.
12 Reports for Year 1913, from Ear and Throat Department of Royal Infirmary, Edinburgh. J. Hewat.

Lancet, London

May 16, I, No. 4733, pp. 1373-1440

13 *Development of Heart in Man in Relation to Its Functional Activity. D. Waterston.
14 Diagnosis of Appendicitis. W. H. Battle.
15 Common Errors in Treatment and Diagnosis of Dietetic Disorders in Infants. E. Pritchard.
16 *Subtotal Gastrectomy for Cancer of Stomach. C. M. Moullin.
17 Pedunculated Intrabronchial Tumor (Sarcoma), Causing Bronchiectasis. J. A. B. Hicks.
18 Cases of Exophthalmic Goiter Treated by Operation. A. J. Walton.
19 *Malignant Tumors of Bones: New Method of Conservative Operative Treatment. R. Wenglowski.
20 Influence of Roentgen Rays on Some Cases of Persistent Suppuration. E. P. Cumberbatch.

13. **Development of Heart in Man.**—In the first stage of its development the heart according to Waterston is a self-regulating organ. Its rhythmic activity is shown by peristaltic waves of contraction which sweep over it from end to end; at this stage it possesses a continuous muscular coat. It is quite independent of the central nervous system. In the next stage—i.e., when the primitive chambers are being divided—a new mechanism arises in the form of a node of specialized tissue situated at the junction of sinus venosus and atrium, which passes thence to the dorsal wall of the atrium and the region of the pulmonary veins. This is the first of the nodal tissues to appear, and is the precursor of the sinu-atrial node of the adult heart. The a-v bundle and node make their appearance about the time of the further division of the chambers of the heart, as a bundle of fibers lying under the posterior endocardial cushion of the atrial canal, and extending from the atrial wall to the ventricular muscular septum. The evidence goes to show that this bundle is derived from the tissues in which it appears, and that from the first it is surrounded by a sheath of loose connective tissue. Fibers and cells from the central nervous system invade this bundle, and also go to other portions of the heart wall, but the intrinsic regulating mechanism appears to arise independently of the nervous system, and is connected only secondarily through that system with other parts of the body.

16. **Subtotal Gastrectomy for Cancer.**—Five years ago Moullin did a subtotal gastrectomy on a woman, 51 years of age and rather stout, for gastric cancer. A guarded prognosis was given, chiefly because of the persistence and severity of the pain. An incision was made across the stomach, running from the right side of the esophagus downward and slightly to the left, so as to remove the whole of the stomach except a small portion at the cardiac end. The upper portion of this incision was closed with a double row of sutures; the lower end was sutured to the edges of an incision of corresponding length in the jejunum, so as to form a gastro-jejunostomy. The patient was sick once forty-eight hours after the operation, bringing up some bile, but in other respects recovery was quite uneventful. In the portion of stomach removed there was a characteristic carcinomatous growth originating on the margin of an old chronic ulcer. The patient is alive and well today with no evidence of recurrence.

19. **Malignant Tumor of Bones.**—In malignant tumors which affect bone, to avoid the resection of the affected portion of bone Wenglowski sterilizes the bone to kill all the elements of the tumor, and then to allow the dead bone to remain in its natural connection with the healthy part of the bone. The sterilization is performed by means of steam under high pressure. For this purpose an ordinary autoclave is used, or even a steam kettle may be employed; in it steam is formed under a pressure of from 3 to 5 atmospheres. On the spout of the kettle Wenglowski puts a thick walled rubber tube from 1½ to 2 meters long, and on the other end of this tube he fastens a piece of metal tubing. This metal piece has many holes for the escape of the steam. For the sterilization of the front side of the bone, he uses a straight metal tube with terminal holes; for the under surface of the bone he uses a larger flattened tube which is slightly curved, and the concave side has the holes for the escape of the steam. After the removal of the tumor in the soft parts he scrapes off the rest of the tumor on the bone and lays bare the bone as for a resection. To protect the soft parts from burning he covers them with three or four thicknesses of gauze; on this he puts a thin sterilized layer of asbestos, and finally a metal plate. This metal plate is used to guard the soft parts from the hot condensation water which might trickle through the gauze and the asbestos. Then the curved metal tube is passed under the bone and the steam is turned on.

To heat the tibia to from 75 to 80 C. it is necessary to apply the steam for three minutes, for the lower jaw-bone one and one-half minutes, and for the condyles of the femur eight minutes. At 2 cm. distant the temperature is only 45 to 50 C., and at 3 cm. distant from 35 to 40 C., so that the effect of the steam only extends to about 2 cm. from the tumor. If the greater part of the bone is to be sterilized the sterilization must be effected bit by bit, the metal tube being pushed along the bone. It is not necessary to sterilize the front surface of the bone by itself, for it is included in the sphere of activity of the steam which has sterilized the medullary cavity.

Quarterly Journal of Medicine, London

April, VII, No. 27, pp. 209-323

21 *Paroxysmal Tachycardia. H. G. Butterfield and G. H. Hunt.
22 Cholesterin: An Account of Its Relations to Pathology and Physiology. J. W. McNee.
23 *Bilateral Salivary Swellings (Mikulicz' Disease). H. Thursfield.
24 *Prognosis of Acute Articular Rheumatism, Special Reference to Cardiac Manifestations. C. G. Kemp.
25 Anaphylaxis and Its Bearing on Medicine. J. McIntosh.
26 Bacterial Endocarditis. I. Simons.

21. **Paroxysmal Tachycardia.**—Four cases of paroxysmal tachycardia are described by Butterfield and Hunt in three of which the heart was examined histologically. In the first case the focus from which the ectopic beats arose was diagnosed as being situated in the ventricles. Post-mortem, the interventricular septum was the site of the most extensive disease. In the second and third cases the tachycardia was supraventricular in origin, in one case being auricular, in the other, either auricular or nodal. In both these cases the most marked lesions were found in the neighborhood of the sino-auricular node. The histologic examination thus confirms the diagnosis made from the electrocardiograms. The fourth case was one of auricular origin; in the intervals between the attacks the patient enjoyed fairly good health.

23. **Bilateral Salivary Swellings (Mikulicz' Disease).**—Clinically, Thursfield says, it is possible to recognize at least eight groups of cases in which bilateral swellings of the salivary glands, either with or without an accompanying enlargement of the lymphatic glands, form the most characteristic symptoms: 1. A congenital, hereditary, or family affection. 2. Mikulicz' disease proper. 3. Mikulicz' disease with involvement of the lymphatic apparatus. 4. Leukemia. 5. Tuberculosis. 6. Syphilis. 7. Gout. 8. Sialodchitis fibrinosa; intermittent or periodic salivary swelling. In addition there are from time to time met with cases which do not appear to belong to any of these groups. The treatment which appears to promise the best results is to remove carefully any possible source of chronic infection, e. g., decayed teeth; to seek to establish the general health; to give arsenic in the largest doses which can be tolerated, and to treat the actual swelling with Roentgen-ray applications.

24. **Prognosis of Acute Articular Rheumatism.**—Kemp claims that 23 per cent. of patients go through one or more attacks of acute rheumatism without any clinical affection of the heart, irrespective of the age when first attacked; 22 per cent. develop signs of carditis in the acute stage, these signs disappearing during convalescence; 18 to 20 per cent. of the cases which develop signs of endocarditis, not clearing up before patient leaves hospital, have no permanent valvular lesion, the murmurs being due to myocarditis, or incompetence from temporary hyperemia of the valves, associated with dilatation. If a synovial membrane can recover, why should not a heart valve, asks Kemp. In 14.5 per cent. of cases with acute rheumatic endocarditis of severe type, the murmurs undergo a change, resulting in the disappearance of one or more of the murmurs, such murmurs being due to associated dilatation. As a rule, the murmurs due to myocarditis are softer in character than those due to valvuiar disease.

Cases in which the heart is going to recover completely show signs of such recovery within twelve months of the acute attack, though the process may not be completed till some years later. Graupner's test for the estimation of the cardiac efficiency has not been proved to be of any value in enabling one to recognize the presence or degree of cardiac weakening, not appreciable by the methods already in general use. The amount of physical work which each individual can do in earning his or her living is a far more reliable and efficient test of the heart's working capacity.

Archives des Maladies du Cœur, etc., Paris

May, VII, No. 5, pp. 289-366

27 *Endocarditis of the Anemia Type. C. Achard and C. Foix.
28 *Heart-Block from Inherited Syphilis. A. Nanta.
29 *Transient Heart-Block in Acute Infectious Disease. (Bradycardie par block partiel. Dissociation auriculo-ventriculaire transitoire. Troubles du rythme cardiaque chez des malades atteints de rhumatisme articulaire aigu.) L. Gallavardin, Pallasse, D. Routier, C. Esmein, C. Pezzi and E. Donzelot.
30 Changes in Electric Phenomena of the Ventricle in Heart-Block. L. Gallavardin.

27. **Anemia with Endocarditis.**—Achard and Foix compare two cases from their own experience with several similar ones on record, all having in common anemia of or approximating the pernicious type in connection with malignant endocarditis. A streptococcus was responsible for the trouble in one of their cases. An intense anemia in the course of a subcontinuous febrile state, remittent or intermittent, sometimes with long intervals, should suggest the possibility of malignant endocarditis. Their patients were a man and woman of 28 and 26, with extreme anemia, debility, edema and gastro-intestinal derangement, but there were no erythematous spots such as Osler described as the "finger sign." The fever was moderate but highly irregular, with intervals of normal temperature, but the pulse kept at about 120 all the time, even during the intervals. A double aortic murmur of long standing was not modified by the endocarditis in one case; in the other a mitral murmur developed just before death. Otherwise the heart gave little sign of its diseased condition. The clinical picture was dominated throughout by the severe anemia.

28. **Heart Block from Inherited Syphilis.**—The possibility of an inherited taint was not suspected in Nanta's case until the woman was over 20, although she had developed anemia at 7, a suppurating joint affection at 9, and Adams-Stokes syndrome at 11, and at 20 and 22 she gave birth to children dead or dying soon after. Her pregnancies were followed by multiple scattered gummas, some of which suppurated and burrowed deep, confining the woman to bed for three years, rebellious to all forms of treatment until a vigorous course of neosalvarsan and mercury put her on her feet again. Although the jugular pulse was 87 and the apex beat only 39, the patient had always led an active life until the last four years.

29. **Transient Heart Block in Acute Infections.**—In Routier's cases the complete heart-block developed in the course of acute articular rheumatism or pneumonia. In the first case amyl nitrite gave no relief but the heart-block subsided under atropin, and in the second case spontaneously.

Bulletin de l'Académie de Médecine, Paris

April 28, LXXVIII, No. 17, pp. 609-636

31 Tuberculous Peritonitis Under Age of 6. A. B. Marfan.
32 Aseptic Puriform Pleural Effusions. Dopter.
33 Technic for Transfusion of Blood. (Recherches sur les réactions sanguines, à considérer à propos de la transfusion du sang.) V. Wallich and C. Levaditi.

Presse Médicale, Paris

April 11, XXII, No. 29, pp. 273-284

34 Thrombosis of the Central Vein of the Retina. F. de Lapersonne.
35 *Indications and Contra-Indication for Digitalis Deduced from the Heart Rhythm. A. Martinet.
36 Tuberculosis plus Cancer on Back of Hand. N. Lapeyre.

May 9, No. 37, pp. 349-360

37 Treatment of Chronic Mastoid Disease. (Evidement pétro-mastoidien.) G. Mahu.

May 13, No. 38, pp. 361-368

38 *Ocular Sympathetic Disturbances. (Le sympathique oculaire.) A. Cantonnet.

35. **Heart Rhythm as Guide for Use of Digitalis.**—Martinet gives a number of diagrams to explain the mechanisms involved in various forms of arhythmia and the effect of digitalis. He summarizes the practical conclusions in the statement that digitalis is formally contra-indicated whenever there is a tendency to heart block, total or partial. It is also generally better to refrain from its use in cases of bradycardia and extrasystoles. It is moderately useful in paroxysmal, emotional or febrile tachycardia, while it may be regarded as almost a specific for tachy-arhythmia from any cause, perpetual, total arhythmia and auricular fibrillation.

38. **The Ocular Sympathetic.**—Cantonnet urges study of the symptoms from irritation or paralysis of the sympathetic innervation of the eye, emphasizing the information liable to be derived therefrom in regard to an affection in the neck, chest, abdomen or spine, of which the oculosympathetic symptoms may be the first warning sign. The paralysis may be preceded by a period of irritation, and may be revealed by exophthalmos or enophthalmos, drooping or retraction of the upper lid, pallor or redness and dryness or moisture of the face. The mydriasis induced by instillation of two drops of a 4 per cent. solution of cocain shows up well any differences between the pupils when they are examined with a dim light eight minutes later. If there

is spasmodic mydriasis from irritation of the sympathetic there will be maximal dilatation after an atropin collyrium and the pupils grow a little smaller under eserin while the reverse occurs with paralytic myosis; atropin causes only slight dilatation and eserin maximum contraction. With paralysis there is also intense mydriasis with the epinephrin test. His personal experience suggests that when the lesion in the sympathetic is in the upper portion, only motor symptoms are observed. When the lesion is below the neck region, vasomotor and secretory disturbances are observed in addition.

Semaine Médicale, Paris

May 6, XXXIV, No. 18, pp. 205-216

39 Amputation of the Breast. (Impotences, douleurs et oedèmes des amputées du sein.) R. de Bovis.

May 13, No. 19, pp. 217-228

40 *Camphor in Pneumonia and Tuberculosis. L. Cheinisse.
41 *Uncontrollable Uterine Hemorrhage in Large Apparently Fibromatous Organ. (Les gros utérus saignants, d'apparence fibromateuse.) F. Lejars.

40. **Camphor in Pneumonia and Pulmonary Tuberculosis.**—Cheinisse reviews a number of articles that have been published in the last year or two on the therapeutic value of camphor. Crouzon advocates adding a little ether to camphorated oil to render it more fluid and thus promote its absorption when injected intravenously; Schule uses ether alone for the vehicle. Subcutaneous injections of camphorated oil have been applied with apparent success in pneumonia by four Russian physicians and by several in Germany. Evidence is accumulating that camphor has a bactericidal action on pneumococci. Hötzel injected subcutaneously twice a day 10 c.c. of camphorated oil in thirty cases of pneumonia and is convinced that it had a specific action. The pneumococcus cannot be cultivated on culture medium containing 1 per ten thousand camphor. Rabbits inoculated with the pneumococcus were saved by a series of subcutaneous injections of camphor without which the controls died. Weihrauch ascribes the antipyretic influence of camphor to its bactericidal action on the mixed infection. When in pneumonia the heart action is good, Svoiekhotov gives the camphor by the mouth every two hours up to the crisis and then at longer and longer intervals for a few days. If the pulse is already up to 120, he begins at once with subcutaneous injections of camphorated oil.

41. **Abnormal Uterine Hemorrhage without Fibroma or Cancer.**—Lejars compares with his own experience the findings recently reported by Briggs and Hendry in 104 uteri after hysterectomy for uncontrollable hemorrhage. They found pedunculated adenomas in fifteen and sessile adenomas in five, and Lejars expatiates on the disturbance liable to be set up by a little tumor of this kind. It acts like a foreign body and tends to induce hypertrophy. In one such case a large median tumor could be felt above the pubis and supravaginal amputation was done as the only measure appropriate for the supposed fibroma. Nothing of the kind was found, however; merely a small polyp implanted in the fundus. The thickened and congested wall had simulated a fibroma on palpation. In a quite recent case a woman of 49 had severe hemorrhages and pain persisting outside of the periods of hemorrhage, with extreme pallor and anemia. The uterus was large as a man's fist but movable, and he removed it as a typical fibromatous organ. The surface proved to be smooth and there were no fibromas except a minute one, very low down. But the uterine wall was abnormally thick and large, measuring almost 5 cm. The mucosa was thickened and edematous. A pedunculated polyp grew near the fundus and a sessile polyp low down. The practical importance of such cases is that examination of the interior will disclose the polyp, and its removal will obviate the necessity for a more serious operation when the woman is still in the child-bearing age. The perfect regularity of the surface of the uterus and its uniform consistency are the only findings which cast a doubt on the assumption of a fibromatous uterus as the explanation of the hemorrhages.

Beiträge zur Klinik der Tuberkulose, Würzburg

XXX, No. 3, pp. 363-490. Last indexed May 23, p. 1696

42 *Inspection and Palpation of the Thorax in Diagnosis of Pulmonary Tuberculosis. S. Galecki.
43 No Benefit from Mesbé Treatment; Eight Cases. (Behandlungserfolge mit Mesbe.) K. Weihrauch.
44 Varying Susceptibility to Different Tuberculins. (Beziehungen der Empfindlichkeit Tuberkulöser auf Partialantigene (Deycke-Much) und auf Alt-Tuberkulin zur prognostischen Form der Lungentuberkulose und zur Prognose (Diagnose) und Therapie von Tuberkulosekrankheit.) H. Kögel.
45 *Analysis of the Reaction to Tuberculin. F. Klemperer.
46 *Human Plus Bovine Tuberculin Tests. H. Nothmann, G. Landmann, C. Siebert and P. Römer.
47 Virulent Tubercle Bacilli in Blood-Stream in Children. P. Lehmann.

42. **Inspection and Palpation of the Chest.**—Galecki tabulates his findings in 300 cases of pulmonary tuberculosis omitting his first 150 cases. He noted a sinking in of the chest wall and of the supra and subclavicula fossae in 43.6 per cent. of the chronic cases in the first stage; in 50.5 in the second and 48.6 in the third stage, confirming the occurrence of this sign with chronic shriveling processes in the lung. The shoulder on the affected side was lower than the other in 190 cases, that is, in 63 per cent. Kuthy's acromion sign was evident in 81 per cent. of all the patients, and in 75 per cent. of the quite recent cases. This sign consists in the lagging behind or total lack of movement in the acromion, the point of the shoulder, as the patient takes a deep breath. Galecki regards this sign as extremely instructive and important, especially when both shoulders present it. He regards it as the most characteristic and striking sign of pathologic interference with the respiratory movements. He found it marked in 69.6 per cent. in the first stage, in 81.9 in the second and 91 in the third, but it gives no hint as to the nature of the process in the lung. He found a difference in the excursions of the ribs on the two sides only in 39 per cent. and mostly in the third stage of the disease. Rigidity of the muscles over the affected area was found in 93 per cent. of the recent cases and not at all with extinct foci. Between these extremes he noted the abnormal local tonus in the muscle in 67 per cent. Local atrophy of muscle was apparent in most of the old chronic cases, corresponding to some degree in extent with the process in the lung. Light touch palpation gave positive findings in 245 of the 346 lung processes with rigid muscles above, but only in 21 of the 132 without local rigidity. Dilated veins were found unreliable as a sign of a pulmonary process.

45. **Research on the Tuberculin Reaction.**—Klemperer found it impossible to render non-tuberculous animals susceptible to tuberculin by preliminary treatment with tuberculin. He concludes from this that the reaction to tuberculin is not a phenomenon of anaphylaxis. He reports further that animals with a local tuberculous process lose their susceptibility to tuberculin for a time after the local process is excised. This seems to demonstrate that the tuberculin reaction is not due to antibodies circulating in the blood. He gives the tracings and tabulated details of his experiments on rabbits and guinea-pigs and some clinical experiences.

46. **Skin Tuberculin Test, Both Human and Bovine.**—Nothmann applied the Pirquet test with both human and bovine tuberculin to 207 children. A negative response was obtained to both in 27 per cent.; 64.2 per cent. reacted positively to both; 0.97 to the bovine alone and 4.3 to the human alone, and 0.5 per cent. to first one and then the other. The significant fact was observed that a reaction to both was obtained at a single trial only in 82.1 per cent. while at the second or third test 91.7 per cent. gave a positive reaction.

Berliner klinische Wochenschrift

May 11, LI, No. 19, pp. 869-916

48 The Toxicology of Corn. (Zum Studium der Maistoxikologie.) B. Gosio.
49 The Mechanism of Internal Ear Functioning. (Art der Labyrinthtätigkeit.) O. Goebel. Concluded in No. 21.
50 Serodiagnosis of Pulmonary Tuberculosis Not Practicable to Date. (Das Abderhalden'sche Dialysierverfahren bei Lungentuberkulose.) M. Wolff and K. Frank.

51 The Physiologic and Therapeutic Action of Pancreas Extracts. F. Müller and S. N. Pinkus.
52 *Collective Inquiry on Goiter. W. V. Simon.
53 *Experimental Rachitis. J. Koch. Commenced in No. 17.

52. **Collective Inquiry on Goiter in Silesia.**—Simon here gives the conclusions drawn from the question-blanks sent to all medical men in Silesia and returned by nearly all, carefully filled out. Twenty-two questions were asked in regard to the prevalence, age incidence, etc., of goiter in each physician's district. A total of 251 cases of goiter were thus listed and a number of goiter nests were discovered. A connection with the drinking water seems more plausible on analysis of the data than the assumption of contact transmission.

53. **Experimental Rachitis.**—Koch injected the *Streptococcus longus* into young animals and an acute infection followed at once, gradually entailing a chronic disease of the bones which apparently was the same as rachitis in man. The dogs allowed to run about freely did not develop the bone trouble or not in the same degree as the dogs kept in stalls. Domestication undoubtedly favors the development of the disease. His experience confirms further the injurious influence of secondary infection after the process of normal ossification had once been upset by the acute infection. The ossification centers are for a long time in a condition of lessened resistance, and an intercurrent whooping-cough, chronic enteritis or the like adds further fuel to the flame. According to his experience, the injurious influence of infections alone—without calling on metabolic derangement—is enough to explain the trouble. Further research will show whether the *Streptococcus longus* alone is capable of this malign influence on the ossification centers or whether other germs may be involved. The pathologic changes in the skeleton after acute infectious diseases in children will repay study, and much may be learned from the veterinarians in this line.

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Correspondenz-Blatt für Schweizer Aerzte, Basel

May 2, XLIV, No. 18, pp. 545-576

54 *Induced Pneumothorax. (Grundsätze und Durchführung der Pneumothoraxtherapie in der Behandlung der Lungentuberkulose.) U. Carpi.

May 9, No. 19, pp. 577-608

55 The Dementia with Dementia Precox. O. Hinrichsen.
56 Whooping-Cough Cured by Casual Laparotomy. (Zur Kenntnis der Pertussis.) F. Rusca.

54. **Induced Pneumothorax.**—Carpi was able to make an artificial pneumothorax in 18 of the 25 cases in which he attempted it, and the results were extremely favorable in 13. He gives an illustrated description of the most interesting cases, including one in a girl of 9. Carpi knows of only 12 other cases on record in which pneumothorax was induced in a child. Her fever began to go down almost at once and by the sixth day the temperature was normal and there was soon no further expectoration. At the sixth month she seems clinically cured.

Deutsche medizinische Wochenschrift, Berlin

May 7, XL, No. 19, pp. 937-992

57 Acute Threatening Conditions with Otitis Media. (Behandlung akut bedrohlicher Erscheinungen bei eitriger Mittelohrentzündung.) W. Kümmel.
58 *Pathogenesis and Treatment of Otosclerosis. A. Denker.
59 Importance of Exterminating the Spirochetes Localized in Primary Focus. (Widerstandsfähigkeit lokaler Spirochätenherde gegenüber reiner Salvarsantherapie.) W. Wechselmann and G. Arnheim.
60 Death from Acute Arsenic Poisoning after Injection of 0.8 Gm. Salvarsan in Seven Days in Non-Syphilitic. F. Lube.
61 Influence of Calcium Salts on Production of Transudates and Effusions, Unfavorable Rather than Otherwise. R. Levy.
62 The Uric Acid in the Blood. (Blutharnsäure.) E. Steinitz.
63 Gastric Cancer as Consequence of Industrial Accident. (Magenkrebs, Unfallfolge.) E. Franck.
64 Technic for Implanting New Eyelashes. (Einpflanzung lebender Haare zur Wimpernbildung.) F. v. Krusius.
65 The Factors in Freud's Psycho-Analysis. P. Engelen.
66 The Lymphatic-Exudative Diathesis and Prophylaxis of Tuberculosis. M. Bockhorn.
67 Etiology of Psoriasis. Jaerisch.
68 Pressure on Growing Testicles from Double Varicocele Probable Cause of Tardy Eunuchoid Condition in Case Reported. G. Schwaer.
69 Organic and Mental Development. S. Meyer.

58. **Otosclerosis.**—Denker says that all the mechanical and local operative measures that have been applied to cure otosclerosis have given such poor results that he cannot recommend any of them, particularly as an aggravation of the deafness from their action lies well within the possibilities. Of internal measures, Politzer advises 1 gm. of potassium iodid daily for ten or fifteen days, repeating this four or five times a year. Some have reported benefit from thyroid treatment; others have been less fortunate with it. Denker had found phosphorus useful, alone or combined with bromid. The progress of the deafness was often arrested and the subjective noises subsided. Patients with otosclerosis should be urged to take a course in lip-reading before the hearing is entirely lost. The main point with otosclerosis is prophylaxis. It has a pronounced familial and hereditary tendency, and is liable to increase in severity during periods of special stress and more active bone growth, as at puberty and during a pregnancy. Derangement of the circulation, as with vasomotor neuroses, syphilis and arteriosclerosis, may also contribute. The physician should warn with special emphasis against the intermarriage of persons with a tendency to otosclerosis. They should guard against catching cold and should avoid cold douches on the head and keep away from the seashore. The question of preventing conception should also be considered, as pregnancy usually brings an aggravation of the trouble.

Medizinische Klinik, Berlin

May 10, X, No. 19, pp. 795-836

70 Diphtheria. (Postgraduate Lecture.) B. Bendix.
71 *Present Status of Paresis. (Die jüngsten Fortschritte auf dem Gebiete der Lehre von der progressiven Paralyse.) A. Pilcz.
72 Electric Treatment of Obesity. (Das Bergoniésche Entfettungsverfahren.) A. Fürstenberg.
73 Pregnancy Undisturbed by Abdominal Operations. (Toleranz des graviden Uterus.) A. Haymann.
74 Influence of Diuresis on Elimination of Salvarsan. (Ausscheidung des Salvarsans im Urin bei intravenöser Injektion konzentrierter wässeriger und konzentrierter Serum-Salvarsanlösungen.) K. Kötter.
75 Salvarsan in General Practice. R. Lenzmann. Commenced in No. 18.
76 Influence of Radio-Active Substances on Immune Serums and Infected Animals. J. Kemen and F. Diehl.
77 *Reaction to Luetin is Specific for Syphilis; the Wassermann Reaction Not Specific. (Ueber Lues.) H. Much.

71. **Paresis.**—Pilcz regards progressive paralysis as more than an affection of the brain alone; the cerebral-nervous symptoms are merely one element in the syndrome. This has been established beyond question, he says, by the positive findings with the Abderhalden test in respect to kidney, heart, spleen and liver tissue in addition to brain tissue. The predisposition to paresis may lie in the individual or in the special strain of spirochetes or in climatic or other modifications of the spirochetes, or in all these factors combined; "paralyticus nascitur et fit." The assumption of an individual predisposition is sustained by the frequent observation that the persons who develop paresis had an unusually mild form of syphilis in its earlier stages, showing an inherent abnormal mode of reaction to the infection. Pilcz cites recent authorities who announce that paresis seems to be becoming more prevalent in tropical countries and Japan, and also cases of conjugal progressive paralysis and tabes are becoming more frequent everywhere. Further experience is confirming also the lack of any febrile affection after the syphilis was acquired, in the history of a long series of patients with paresis, while a history of some febrile infection was almost invariably encountered among their syphilitic mates who had escaped progressive paralysis. This is the basis of von Wagner's tuberculin-fever therapy in treatment and prophylaxis of paresis, and Pilcz reiterates that favorable reports on this are accumulating from Tamburini and Battistessa in Italy, Siebert and Glouschkoff in Russia, Hudovernig and Wachsman in Hungary, and Meyer, Friedländer, Röper and Pilcz himself in Germany and

Austria. The fever therapy with staphylococcus vaccine, with nuclein or salvarsan might be usefully combined with the tuberculin-fever therapy. Nonne emphasizes the logical favorable action of the induced febrile reaction with its leukocytosis now that Noguchi has shown that the spirochetes in the brain lie in tissues which otherwise are almost entirely reactionless.

77. **The Luetin and Wassermann Reactions as Guides to Treatment.**—Much summarizes his conclusions from study of these reactions in syphilis in the statement that when it is a question of ascertaining whether the patient has ever had syphilis, the response to the luetin test is most instructive. But when it is a question of ascertaining whether the organism is still under the influence of the syphilis toxin, then the Wassermann test is more instructive. As a guide to treatment, the effort must be made to render the Wassermann negative, as this is a manifestation of destruction of tissue. On the other hand, the luetin reaction —as the expression of production of specific immune bodies —should be kept positive.

Mitteilungen aus den Grenzgeb. der Med. und Chir., Jena

XXVII, No. 5, pp. 807-933. Last indexed May 23, p. 1698

78 *Increased Resistance of Peritoneum to Infection in Treatment of Appendicitis. S. Solieri.
79 *Organic Basis for Epilepsy. (Beziehungen von organischen Veränderungen der Hirnrinde zur symptomatischen Epilepsie.) W. Denk.
80 Operations for Benign Stomach Disease; 128 Cases. (Zur Chirurgie der gutartigen Magenerkrankungen.) M. Krabbel and H. Keinitz.
81 Embolic Aneurism as Complication of Acute Endocarditis. O. Lindbom.

78. **Enhanced Resistance of the Peritoneum in Acute Appendicitis.**—Solieri was a pioneer in efforts artificially to increase the resisting powers of the peritoneum preliminary to operations and in treatment of acute infections. Various chemicals have been used to rally the phagocytes in the region, but his experimental work seems to have demonstrated that a sterile culture of the colon bacillus is by far the most efficient of all substances tested to date to accomplish this purpose. Preventive injection into the guinea-pig peritoneum enhanced twenty-fold its resisting powers against living and virulent cultures of the same species. On this basis he assumed that the colon bacillus toxin already in the peritoneum in acute appendicitis would answer the purpose of a preliminary treatment from without, attracting the phagocytes and generating agglutinins, and consequently that after excising the appendix the peritoneum can be left tranquilly unmolested from without, leaving the appendicectomy incision completely sutured, without draining, when there is reason to assume the organism is capable of vigorous phagocyte action and agglutinin production. After removal of the disease focus in the appendix the peritoneum, under the influence of the colon bacillus toxin, finds its resisting powers so enhanced that it needs no further aid from without. In a series of 336 acute appendicitis operations he found only twenty-seven cases in which the conditions were favorable for this, namely, the patients were young and vigorous; they had had previous attacks of appendicitis testifying to abundant bacillus-toxin production; the delay before operation was not over twelve to forty-eight hours after the first symptoms; the blood showed pronounced leukocytosis and pronounced reaction to the Rivalta serum test; there was also considerable febrile reaction; the pulse was strong and regular; the urine showed that the kidneys were in good condition; there were no signs of other disease, and the appendix had not perforated and the reaction of the peritoneal serosa, as estimated during the operation, was regarded as adequate for the purpose. The details of the series are tabulated, all showing rapid and complete recovery and almost invariably by primary intention.

79. **Connection between Organic Changes in the Brain Cortex and Symptomatic Epilepsy.**—Denk gives an account of considerable experimental work on dogs and rabbits and analysis of 33 clinical cases of brain tumors, only 5 of which were without epilepsy, and 28 cases of epilepsy with operation or necropsy findings in nearly all. All this material is sifted and compared, and certain common traits are thus rendered evident. Aseptic organic changes in the brain do not seem able of themselves to induce epilepsy. There is always some accessory factor in the cases in which the epilepsy develops. This may be an inherited predisposition; this alone is liable to be enough to start the epilepsy without any organic changes. Alcoholism is liable to be the subsidiary factor which, superposed on the organic changes, may bring on the epilepsy even in the not otherwise predisposed. Tumors, inflammation and mechanical irritation may bring it on with a natural predisposition. The cicatrix from an operation is liable to induce epilepsy when superposed on alcoholism or a predisposition, even in cases in which there had been no tendency to epilepsy before the operation on the brain. The above conclusions impose the necessity for an early operation without delay when internal measures have failed, seeking to forestall the development of extensive pathologic changes in the brain. Another practical conclusion is that it is immaterial what living material is selected to close defects in the skull and interpose between tissues; all are absorbed in time, whether dura, fascia or other living material is used. The favorable reports from plastic operations of the kind with dura are the result, Denk insists, of the buffer action of the interposed tissue as long as it persisted, the blood drawn during the operation and the manipulation of the cortex.

Münchener medizinische Wochenschrift

May 5, LXI, No. 18, pp. 969-1024

82 Small-Pox Infection and Vaccination as they Influence Each Other. (Pockeninfektion und Vakzination in ihrer gegenseitigen Beeinflussung.) C. Baumler.
83 Intracutaneous Tuberculin Test on Guinea-Pigs More Instructive than Cutaneous. P. Esch.
84 Percutaneous Tuberculin Therapy. A. Kutschera.
85 Treatment of Paralysis of the Respiration by Intratracheal Insufflation of Oxygen. (Behandlung von Atemlähmungen mit Sauerstoffeinblasung in die Luftröhre.) E. Leschke.
86 Negative Effect of Vaccine Therapy on Developed Typhoid; Eight Cases. E. Allenbach.
87 Serodiagnosis of Pregnancy by Nitrogen in the Dialysate. (Zur quantitativen Ausführung der Abderhaldenschen Schwangerschaftsreaktion mittels der Stickstoffbestimmung im Dialysate.) W. Griesbach.
88 Serodiagnosis of Pulmonary Tuberculosis. (Das Abderhaldensche Dialysierverfahren bei Lungentuberkulose.) J. Gwerder and O. Melikjanz.
89 Commercial Vitamins. (Zur klinischen Bedeutung der Vitamine.) P. Hüssy.
90 In What Form Is Calcium Found in the Blood? (Kalk im Blute.) O. Loew.
91 Heart and Vessel Tonics May Be Effectual in Bronchial Catarrh. (Gefäss- und Herzmittel bei Bronchialkatarrh.) M. Saenger.
92 Tuberculous Processes at Pylorus and in Stomach Wall. H. Schlesinger.
93 Gamma Radium Rays Produced in Roentgen Tubes. F. Dessauer.
94 Elastic Rubber Ball for Pessary to Correct Prolapse. (Einfacher Retentions-Apparat bei Senkung und Vorfall des Uterus und der Scheidewande.) Doldi.

Therapeutische Monatshefte, Berlin

May, XXVIII, No. 5, pp. 309-388

95 *Systematic Restriction of Fluids in Treatment of Bronchiectasia and Chronic Bronchitis. G. Singer.
96 *Benzol in Myeloid Leukemia. N. D. Liberow.
97 Subcutaneous Injection of Calcium Lactate Helps to Cure Inflammatory Processes. E. Landsberg.
98 Corpus Luteum Extract in Treatment of Uterine Hemorrhage. E. Landsberg.
99 Scientific Cooking for the Sick. (Die diätetische Küche.) W. Sternberg.
100 *Treatment of Associated Gout and Diabetes. C. von Noorden.
101 Addition of 0.13 per cent. Salicylic Acid Alleged to Keep Emulsions for a Week. (Zu der Zersetzlichkeit von Emulsionen.) E. Apolant.
102 *Danger of Error from Similarity of Names of Certain Proprietaries. (Aehnlich klingende Arzneinamen.) W. Heubner.
103 *Lay Appreciation of German Commission on Pharmacy and Chemistry. (Die Arzneimittelkommission.) W. Heubner.

95. **Treatment of Bronchiectasia and Chronic Bronchitis.**—Singer is enthusiastic over the benefit derived in cases of this kind from reduction of the intake of fluids. The expectoration decreased at once and with it the cough in cases of chronic bronchitis and purulent bronchiectasia. The

patients are given abundance of mixed food but the total amount of fluid in the twenty-four hours, in soups, beverages, etc., is restricted to 600 c.c. On the fourth day the patient is encouraged to drink at will, thus thoroughly flushing out the system. Then he is restricted anew in the intake of water, down to 400, 300, or 200 c.c. for the next three days. It is sometimes advantageous to give in the form of wine the quantum of fluid allowed.

Slices of lemon or orange also help to quench the thirst, and certain bonbons. The thirst may also be combated by a sedative taken into the stomach, but he was very seldom compelled to resort to these measures. When the patient once gets accustomed to the restriction he can keep it up for weeks without discomfort or harm; the interposed days of unlimited fluid intake twice a week keep the system washed out so there seems to be no danger of uremia, etc. Brauer and Hochhaus also report gratifying results. Singer has seven patients who have been completely cured for two years, and a number of others keep in clinical health by repeating the "thirst cure" for several weeks two or three times a year. No by-effects were ever observed. In the majority of cases the patients gain from 20 to 25 pounds in a few weeks as the drain from the sputum production stops. Certain forms of pulmonary tuberculosis accompanying the chronic bronchitis seem to be benefited along with the latter by the thirst cure. An unsuspected suppurative process in the maxillary antrum kept up the bronchitis in one case until it was discovered and cured after which the bronchitis rapidly subsided under the restriction of fluids. A syphilitic factor does not interfere with the treatment and the latter does not exclude application of superheated air and other measures, including calcium, and inhalation of oxygen to combat putrefaction bacteria.

He has found the "thirst cure" effectual also in a number of cases of asthma long rebellious to all other measures. He regards asthma as a manifestation of the constitutional tendency known as the exudative diathesis. The transudation of fluid into the bronchi is an important element in the clinical picture of asthma, and this element can be abolished by restricting the intake of fluids. His theory that the "thirst cure" modifies osmosis has been confirmed by his findings in six cases after intravenous injection of a hypertonic salt solution. This had the same only a much more intense effect than restriction of fluids. Even slight changes in the concentration of the body fluids and serum suffice to attenuate or arrest completely the paroxysmal or continuous flooding of the bronchi with fluid. When this is accomplished, he adds, there is no further asthma, bronchitis heals, and the suppuration in bronchiectasia ceases.

96. **Benzol in Leukemia.**—Liberow reports a case showing an unmistakable improvement under benzol but he warns that it should not be given except with constant oversight over the blood and urine. He did not give large doses, keeping usually at 2 or 1.5 gm. When the leukocytes had dropped to 13,000, he reduced the dose still more, so that there was no further decline of leukocytes and the reds rose and kept above 5,000,000, the hemoglobin at 62 per cent. The patient was a woman of 34 with extreme ascites, probably from pressure on the portal vein by a leukoma; as the latter subsided under the influence of the benzol the circulation grew better and the ascites disappeared.

100. **Treatment of Associated Gout and Diabetes.**—Von Noorden states that in his experience with 6,000 diabetics in the last twenty years he has encountered scarcely a dozen with actually severe gout. As a general thing, associated gout and diabetes are both in a mild form, but there seems to be a special liability to serious complications: cardiovascular or kidney disturbance, cataract, retrobulbar optic neuritis, neuralgia and neuritis. The two last are most common and severe. The physician is apt to regard these painful affections as the work of the gout, and consequently directs treatment at the gout, when in reality hyperglycemia is responsible for the neuralgia and neuritis in most cases. This is what should be combated; the gout can be disregarded; the main point is to put the patient on an antidiabetic diet. Under this the glycosuria rapidly subsides; the hyperglycemia persists much longer—longer under these conditions than otherwise. But rebellious and chronic neuralgia, especially sciatica, can be cured in this way in the course of a few weeks when previously all kinds of treatment had given only transient improvement at best. The manifestations of the gout and any kidney trouble improve on the antidiabetic diet; it may be advantageously supplemented by physical measures when the hyperglycemia has subsided. This cannot be anticipated until after four or five weeks. To keep the patient in good condition afterward, at least on one day a week he should refrain from purin and carbohydrate food and every second month should have a purin-free two-week period. If the gout and diabetes are both severe he advises a diet to combat each in turn for two weeks. In conclusion he warns that persons with both gout and diabetes are unable to tolerate colchicum preparations as a rule.

102. **Possible Dangers from Confusion of Names of Proprietaries.**—Heubner remarks that manufacturing chemists seem to be running out of names for their productions, as so many of the new names are the same except for the change of a letter or two. Rabow, writing recently in the *Chemiker Zeitung*, comments that the handwriting of physicians is not always very distinct, and when medicines have closely similar names there is liable to be confusion. Heubner cites as examples "the laxative Darmol; the sedative, Dormal; the wood-preserving mixture, Dormial; the hypnotic Dormiol and the remedy Dormonal; the hypnotic, Chinoral; the internal antiseptic, Chinorol; the external antiseptic, Chinosal, and the remedy Chineonal."

103. See Propaganda Department.

Wiener klinische Wochenschrift, Vienna

May 7, XXVII, No. 19, pp. 597-644

104 Experiments on Animals Fail to Sustain Mechanical Origin of Arteriosclerosis. H. Schmiedl.
105 Local Differences in Temperature of the Skin within Normal Range with Apical Affections. W. Heinz.
106 *Roentgen-Rays and Benzol in Leukemia. A. Pulawski.
107 *Treatment of Chronic Leg Ulcer with Radium Emanations. J. Saphier.
108 *Favorable Effect of Intravenous Injections of 10 per cent. Salt Solution to Arrest Hemoptysis. J. Moczulski.
109 Suggestions for Internal Equipment of Hospitals. M. Setz.

106. **Treatment of Leukemia.**—Pulawski's case of lymphatic leukemia emphasizes the importance of combining roentgenotherapy with benzol. His patient was a woman of 51 who for two years had had enlargement of lymph-nodes in various regions and an abdominal tumor. Her present complaints were of sacral pains and pain in the left abdomen, weakness and cough, with signs of mild kidney trouble and the blood findings typical of lymphatic leukemia. Under six Roentgen exposures in nine days the whites dropped from 425,600 to a third; this was followed with 50 gm. benzol in sixteen days and the whites dropped to 8,400. There was some fever during the last week or so of the benzol course. Then the Roentgen exposures were resumed, four being given in nineteen days. After suspension of the benzol the whites continued their decline, finally reaching 1,100 and then 2,600 by the end of the three months' course of treatment. The general condition has continued to improve as well as the blood-picture, the lymphocytes dropping from 90 to 41 per cent., the neutrophils climbing from 10 to 49 per cent. The lymph-nodes have returned to normal size and the spleen to a quarter of its first size. The anemia was quite pronounced when the benzol course was concluded, but improved under iron, arsenic, calcium glycerophosphate and cod liver oil.

107. **Radium Emanations for Leg Ulcer.**—Saphier states that in ten of twenty-one rebellious cases of old leg ulcer a complete cure was realized under a course of radium emanation treatment. Material benefit was realized also in six other cases. No effect was apparent in five.

108. **Hypertonic Saline Infusion for Hemoptysis.**—Moczulski states that in nine cases of hemorrhage from the lungs

the tendency to hemoptysis was favorably influenced by intravenous infusion of 10 c.c. of a 10 per cent. salt solution. The effect is not apparent at once and it does not protect against recurrence of the hemoptysis. No influence was apparent in purpura and other hemorrhagic affections.

Zentralblatt für Chirurgie, Leipsic

May 9, XLI, No. 19, pp. 801-840

110 Improved Technic for Resection of Lower Esophagus. (Witzel's Verfahren für die Resektion des Oesophagus im kardialen Abschnitt.) H. Schwers.

Zentralblatt für Gynäkologie, Leipsic

May 9, XXXVIII, No. 19, pp. 681-712

111 Hypophysis Extract to Stimulate Peristalsis after Operations. E. v. Konrad.
112 Coitus Interruptus as Cause for Ovarialgia. A. Herzfeld (New York).

Gazzetta degli Ospedali e delle Cliniche, Milan

XXXV, Nos. 50-54, pp. 521-576

113 *Action of High Frequency Currents on the Blood-Pressure in Connection with the Permeability of the Kidneys. M. Fontana.
114 Epigastric Hernia. N. Federici.
115 Cysts of the Spermatic Cord Originating in Connective Tissue. R. Mosti.

113. **Electric Currents and the Blood-Pressure.**—Fontana comments on the contradictory experiences related by different clinicians in respect to the action of the high frequency currents on the blood-pressure, some reporting considerable reduction in abnormally high pressures while others have observed nothing of the kind. He had similar contradictory experiences himself and he set out to discover the cause for this variability in the action of the currents. Analyzing forty-seven cases he found that the blood-pressure was constantly reduced when the kidneys were normally permeable, but that they failed in this influence when the kidney functioning was below par. The current causes slight dilatation of the vessels, and this in connection with the stimulation of metabolic processes which it induces, causes a throwing off of waste products through the kidneys if they are equal to this task. The result is a marked drop in the blood-pressure. The outcome therefore depends on the permeability of the kidneys.

Policlinico, Rome

April, XXI, Surgical Section No. 4, pp. 153-204

116 Blocking the Inferior Maxillary Nerve. (Nuova technica per le iniezioni neurolitiche nel tronco del nervo mascellare inferiore a livello del foro ovale.) F. Bonola.
117 Starch-Digesting Properties of Urine Unreliable Index of Kidney Functioning. (La determinazione amilolitica nelle urine come metodo di diagnosi della funzione renale.) E. Pirondini.
118 Echinococcus Cysts in Muscle or Kidney; Three Cases. L. Longo.

Riforma Medica, Naples

May 2, XXX, No. 18, pp. 476-504

119 Chronic Progressive Bone and Joint Disease. (Endocrinopatologia e patogenesi delle osteo-atropatie croniche progressive.) R. Massalongo. Commenced in No. 17.

Brazil Medico, Rio de Janeiro

April 15, XXVIII, No. 15, pp. 143-152

120 Treatment of Ozena by Intravenous Injections of Tartar Emetic. G. Vianna.
121 Development of the Toxoplasma Canis in the Animal Body. (Toxoplasmose. Evolução do toxoplasma canis no systema nervoso do pombo e as lesoes por elle produzidas.) J. B. Arantes.
122 *The Liver in Chronic Malaria. (O figado no paludismo chronico.) C. Fraga.

122. **The Liver in Chronic Malaria.**—Fraga's extensive experience with chronic malaria has demonstrated that this disease has a tendency to spare the liver. True malarial disturbances in the liver are comparatively slight. The cirrhosis of the liver so often encountered in chronic malaria is due mainly to the same causes, alcoholism, etc., which induce it under other conditions. The anemia in chronic malaria is often due to helminthiasis which is particularly prevalent in the malaria zones. His functional tests applied to the liver in chronic malaria, including the alimentary lipemia or hemoconiae test, all revealed merely comparatively slight disturbance in liver functioning, curable by the ordinary measures.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

LVIII, No. 4, pp. 237-304

123 Chemotherapy of Cancers. C. Vermeulen.
124 *Familial Orthostatic Urobilinuria. F. A. Steensma.

No. 5, pp. 305-376

125 Fibrin as Factor in the Coagulation of the Blood. E. Hekma.
126 Fatal Electric Accidents. (Iets over den electrischen dood.) D. Brocx.

No. 6, pp. 377-460

127 Congenital Megacolon. (Ziekte van Hirschsprung.) A. E. Sitsen.
128 Epidemic Poliomyelitis in the Netherlands. F. H. van Loon.
129 Collapse after Injection of Pituitrin. A ten Doesschate.

No. 7, pp. 461-528

130 Unreliability of the Urobilinogen Reaction with Ehrlich's Aldehyd Reagent. F. A. Steensma.
131 Advantages of Returning to Work at once after Clinical Recovery from Accidents to Ward off Traumatic Neuroses. J. A. Korteweg.
132 *Complications Liable with Reduction of Congenital Dislocation of the Hip Joint. P. Redard.
133 Anthropologic Research on Island Near Sumatra. J. P. K. de Zwaan.
134 *Prevalence of Tuberculosis among the Elderly with Bronchitis. J. Sanders.

124. **Familial Orthostatic Urobilinuria.**—Steensma gives a family chart through five generations with sixteen members who have orthostatic urobilinuria: that is, there is urobilin in the day urine and not in the night urine. Somewhat similar findings were encountered in a second family. He thinks that there must be a family tendency in these cases for the ductus venosus not to become impervious as under normal conditions. The patent duct would permit some of the blood from the intestines to get into the blood stream without passing through the liver.

132. **Tardy Complications after Reduction of Congenital Hip Joint Disease.**—Redard refers to the development of ostitis or osteomalacia in the joint after apparently successful reduction of congenital dislocation. Five, eight or ten years later a tendency to coxa vara may become apparent, with more or less atrophy and deformity of the head and upper end of the femur. The ossification centers probably were injured to start with. Such cases teach the necessity for keeping patients long under supervision and not to have the immobilizing appliance worn too long, not over six months at most.

134. **Tubercle Bacilli in Apparently Non-Tuberculous Elderly Persons.**—Sanders examined the sputum of all the inmates over 60 years old of a Rotterdam hospital who were apparently free from tuberculosis but had signs of chronic bronchitis. He obtained sputum in thirty-nine cases and found tubercle bacilli in them in nine. This shows that the apparently harmless bronchitis of the elderly may be an unsuspected source for infection of others.

Hospitalstidende, Copenhagen

May 13, LVII, No. 19, pp. 577-608

135 Technic for Determination of Nitrogen in the Urine. (Klinisk Metode til Kvælstofbestemmelse i Urin.) M. Krogh.
136 Improved Technic for Determination of Alveolar Carbon-Dioxid Tension. (En klinisk Metode til bestemmelse af Kulsyrespændingen i Lungeluften.) L. S. Fridericia.

Norsk Magazin for Lægevidenskaben, Christiania

May, LXXV, No. 5, pp. 505-648

137 History of Medicine and Medical Profession in Norway, 1814-1914. (Hundredaarets utvikling av Norges lægevæsen og lægevidenskap.) F. G. Gade.
138 Congenital Diverticula in Intestines and Their Consequences; Two Cases. N. A. Nicolaysen.
139 Transposition of the Viscera. (Utebleven rotation av colon. Coecum mobile. Ileus.) R. Ingebrigtsen.
140 Improvement under Benzol in Case of Myeloid Leukemia. N. B. Koppang.
141 Salvarsanized Serum in Treatment of Syphilis of the Nervous System. G. H. Monrad-Krohn.

Ugeskrift for Læger, Copenhagen

May 7, LXXVI, No. 19, pp. 839-910

142 Dietetics in Hospital Treatment. (Diætbehandling paa Hospitaler.) V. Scheel.

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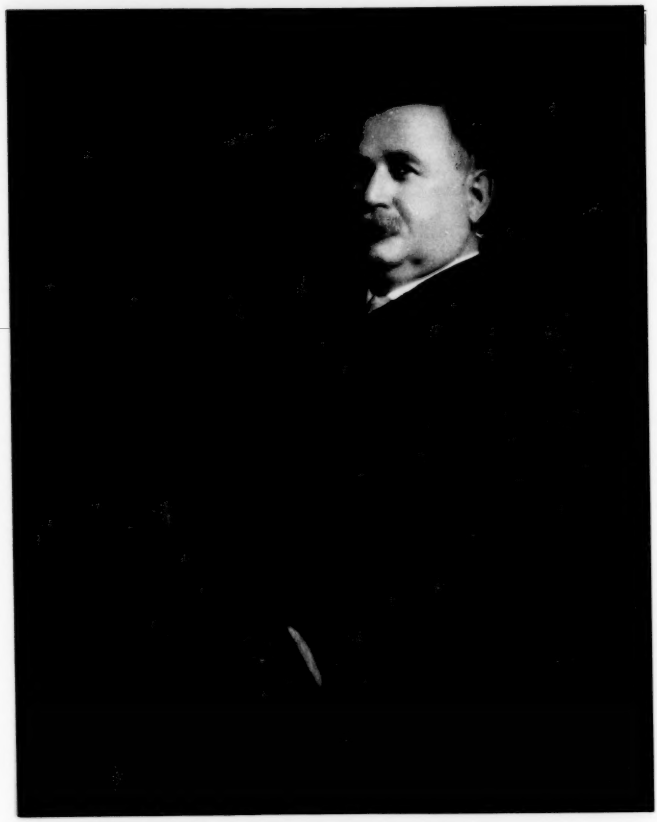

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